Supporting Statement for a Request for OMB Review under the Paperwork Reduction Act

1. IDENTIFICATION OF THE INFORMATION COLLECTION

1(a) Title of the Information Collection

TITLE: Toxic Chemical Release Reporting, Recordkeeping, Supplier Notification and Petitions under Section 313 of the Emergency Planning and Community Right-to-Know Act

EPA ICR No.: 1363.09

OMB Control No.: 2070-0093

1(b) Short Characterization

This Information Collection Request (ICR) is for the information collection requirements for toxic chemical release reporting under section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) (42 U.S.C. 11001 *et seq*.) and the information collection in section 6607 of the Pollution Prevention Act (PPA) (42 U.S.C. 11071 to 11079). In short, EPCRA §313 requires certain owners or operators of certain facilities (i.e., currently manufacturing facilities in Standard Industrial Classification (SIC) codes 20 through 39, and facilities in SIC codes 10 (except 1011, 1081, and 1094), 12 (except 1241), 4911, 4931, 4939 (limited to facilities that combust coal and /or oil for the purpose of generating power, 4953 (limited to facilities regulated under the Resources Conservation Recovery Act, subtitle C, 42 U.S.C. section 6921 et. seq.), 5169, 5171, 7389 (limited to facilities primarily engaged in solvent recovery services on a contract or fee basis) manufacturing, processing, or otherwise using any of over 600 listed toxic chemicals and chemical categories (hereafter "toxic chemicals") in excess of the applicable threshold quantities to report on their environmental releases and transfers of and waste management activities for such chemicals annually. Under section 6607 of the PPA, facilities must provide information on the quantities of the toxic chemicals in waste streams and the efforts made to reduce or eliminate those quantities.

Currently, facilities subject to the TRI reporting requirements may either use the EPA Toxic Chemical Release Inventory Form R (EPA Form #9350-1), or the EPA Toxic Chemical Release Inventory Form A (EPA Form #9350-2, which is approved under OMB Number 2070-0143). The Form R must be completed if a facility manufactures, processes, or otherwise uses any listed chemical above threshold quantities. For the Form A, EPA established an alternate threshold for those facilities with low annual reportable amounts of a listed toxic chemical. A facility that meets the appropriate reporting thresholds, but estimates that the total annual reportable amount of the chemical does not exceed 500 pounds per year, can take advantage of an alternate manufacture, process, or otherwise use threshold of 1 million pounds per year for that chemical, provided that certain conditions are met, and submit the Form A instead of the Form R. Facilities may submit information on multiple chemicals on a single form A.

In accordance with EPCRA section 313 (and PPA section 6607 because of its linkage to EPCRA), EPA's Office of Pollution Prevention and Toxics (OPPT) collects, processes, and makes available to the public all of the information collected. The information gathered under these authorities is stored in a database maintained at EPA and is available through the Internet. The TRI has been used extensively by both EPA and the public sector. Program offices within EPA have used the TRI, along with other sources of data, to establish priorities, evaluate potential exposure scenarios, and for enforcement activities. Environmental and public interest groups have used the data in several studies and reports, making the public more aware of releases of chemicals in their communities.

With TRI, and the real gains in understanding it has produced, communities and governments know what listed toxic chemicals many industrial facilities in their area release, transfer, or otherwise manage as waste. In addition, industries have an additional tool for evaluating efficiency and progress on their pollution prevention goals.

OMB last approved this Information Collection request on April 30, 1997 and it expires on April 30, 2000. The existing reporting and recordkeeping requirements associated with Form R, supplier notification and petitions are discussed in this ICR (EPA ICR #1363), which is separate from the ICR related to the alternate reporting requirement of Form A (EPA ICR #1704). The reporting and recordkeeping requirements associated with the alternate reporting requirement using Form A are contained in a separate ICR and are approved under OMB Control #2070-0143 (EPA ICR #1704). OMB last approved the Form A ICR on February 1, 1999, for use through February 28, 2001. Please note that these two ICRs function entirely separately, such that the OMB action taken with regard to EPA ICR #1704 applies only to the alternate reporting requirements and Form A, and that any OMB action taken with regard to the Form R ICR (EPA ICR #1363), will apply only to the existing reporting and recordkeeping requirements associated with Form R, supplier notification and petitions.

As specified by 5 CFR 1320.12(a)(1), EPA issued a Federal Register notice on July 28, 1999 (64 FR 40862), which sought comments on the renewal of this ICR as required by 5 CFR 1320.8(d) regarding the burden estimates and the information collection activities described in the proposed ICR. EPA has reviewed the comments received during the 60 day comment period and has included its review as ATTACHMENT G. The proposed revised Form R is included in this document as ATTACHMENT F. This modified Form will not become effective until OMB approves it.

In addition, this ICR has been modified to include changes resulting from the final rule EPA issued on October 29, 1999 (64 FR 58666). The final rule lowers the reporting threshold for PBT chemicals and adding certain PBT chemicals to reporting under EPCRA section 313. By lowering the reporting threshold that triggers reporting, the rule will increase the number of reports submitted to EPA. For chemicals with a lowered reporting threshold, the new threshold will be lower than the

existing Form A alternate reporting threshold. Therefore, EPA is prohibiting the use of Form A for those chemicals, and burden estimates were prepared for Form R ICR only, not for the Form A ICR. EPA prepared and submitted to OMB an amendment to the base Form R ICR to address the information collection requirements contained in that rule (EPA ICR #1363.10). A copy of that ICR (#1363.10) is attached to this Form R ICR as ATTACHMENT H.

Estimates of the burdens that will be imposed as a result of the final TRI PBT rule have been incorporated into the burden and cost estimates found in Section 6 of this ICR, ESTIMATING THE BURDEN AND COST OF THE COLLECTION.

Please note that EPA has also proposed another amendment to this Form R ICR in conjunction with a proposed rule issued on August 3, 1999 (64 FR 42221), in which EPA proposed to lower the EPCRA section 313 reporting thresholds for lead and lead compounds. EPA believes that lead and lead compounds are PBT chemicals that warrant lower reporting thresholds than those currently established under EPCRA section 313. The proposed action also includes a limitation on the reporting of lead when contained in certain alloys and proposed modifications to certain reporting exemptions and requirements for lead and lead compounds. The information requirements contained in this proposed rule are not effective until the final rule stage. As such, this ICR does not address the burden or costs related to that proposed rule. For information about the estimated burden and costs related to the proposed rule, please consult the proposed amendment ICR (EPA ICR #1363.10). You may obtain a copy of that ICR from Sandy Farmer; U.S. Environmental Protection Agency (2137); 401 M St., SW.; Washington, DC 20460, by calling (202) 260-2740, or electronically by sending an e-mail message to ``farmer.sandy@epa.gov." You may also view an electronic version of this ICR, along with the proposed rule and other supporting information, on the TRI Home Page at http://www.epa.gov/tri/.

2 NEED FOR AND USE OF THE COLLECTION

2(a) Need/Authority for the Collection

This information collection activity is a statutory requirement pursuant to sections 313 of EPCRA (42 U.S.C. 11001 *et seq.*) and section 6607 of the PPA (42 U.S.C. 11071 to 11079). According to EPCRA section 313(h), the data submitted in the forms are intended to "inform persons about releases of toxic chemicals to the environment; to assist governmental agencies, researchers, and other persons in the conduct of research and data gathering; to aid in the development of appropriate regulations, guidelines, and standards; and for other similar purposes."

Section 6602 of the PPA establishes a national policy that pollution should be prevented or reduced at the source whenever feasible. To further this goal, EPA is to establish a source reduction

program which, among other responsibilities, is to collect and disseminate information. The information collected under section 6607 is intended to fulfill that responsibility in part and to provide a basis for measuring progress in pollution prevention in certain industrial groups.

Annual reporting under EPCRA section 313 of toxic chemical releases and other waste management information provides citizens with a more complete picture of the total disposition of chemicals in their communities and helps focus industries' attention on pollution prevention and source reduction opportunities. EPA believes that the public has a right to know about the disposition of chemicals within communities and the management of such chemicals by facilities in covered industries subject to EPCRA section 313 reporting.

Current TRI reporting has been successful in providing communities with important information regarding the disposition of toxic chemicals, and other waste management information on toxic chemicals from manufacturing facilities in their communities.

The information collected under EPCRA section 313, and subsequently distributed through EPA outreach and awareness programs, is provided at relatively low cost compared to the value it represents to the general public. Through mass mailings to all facilities within the manufacturing sector of the economy, work with a wide variety of trade associations representing covered industries, local and national seminars, training courses, and enforcement activities, EPA has endeavored to locate all facilities required to report under section 313 of EPCRA and inform them of their obligations. In addition, EPA has prepared various tools to assist facilities in complying with EPCRA. These materials include detailed reporting instructions, a questions and answer document, magnetic media reporting instructions, general technical guidance, and 21 industry and chemical specific guidance documents. In addition, EPA maintains a toll-free hotline to answer regulatory and technical questions to assist facilities in preparing TRI reports.

Furthermore, TRI reporting does not require a rigid, one-size fits all approach to estimating and reporting release information. EPA believes the submitters of the TRI data are best informed to honestly and accurately report information, within certain parameters provided by EPA. The Agency believes in the good intent of the reporters to use the most appropriate means to accurately estimate the release information. EPA does, however, also invest in enforcement and compliance efforts to insure that reporting is being done consistently and thoroughly by regulated industries.

2(b) Use/Users of the Data

According to many, the TRI program is one of the most effective environmental programs ever legislated by Congress and administered by EPA. Its success is due, in large part, to the right-to-know

provisions contained in the legislation itself. By requiring that the resulting data be made publicly available "by electronic and other means," Congress ensured that citizens, the media, environmental advocates, researchers, the business community, and others could influence and evaluate industry's efforts to manage toxic emissions. Consequently, data collected under EPCRA section 313 and section 6607 of the PPA is made available through EPA's Envirofacts database. This database integrates data from five major EPA programs, including TRI. In addition, the public may also obtain TRI information through the National Library of Medicine's TOXNET and Unison Institute's Community Right-to-Know Network (RTK-Net).

In addition to providing information to the public via electronic means, EPA also conducts outreach activities to make key groups and the public aware of TRI. Journalists, educators, public interest, labor, and environmental groups, trade associations, and state governments continue to be key targets in these outreach efforts. In addition, libraries in communities all across the U.S. (in particular, members of the Federal Depository Library Program), are committed to providing public access to TRI data in a variety of formats. Educators are also using the data to conduct studies and courses on the environment. Labor unions are using the TRI data to improve conditions for workers. Businesses are using the data in many ways -- as a basis for reducing emissions, to cut costs, to improve operations, and for a variety of other reasons. Concerned citizens are a growing user group. These individuals, on their own and through organized groups, are using TRI to address concerns about the management and release of chemicals in their communities. Finally, states use the national data to compare chemical management and releases within industries and to set environmental priorities at the state level.

Because the value of TRI increases as more people use it, EPA encourages these organizations to acquaint new users with TRI, help people who already know about TRI to better use and understand the data, and, whenever possible, provide feedback on how to improve TRI products and services. The following are some examples of how the TRI data are used, both by EPA and others. Please note that the information pertaining to the use of TRI data by other EPA offices, Agencies, governmental entities, communities, public interest groups and organizations is based, in large part, on information originally provided in the 1996 ICR (EPA ICR #1363.06). It is intended to provide an overview sampling of some of the various ways in which others are using TRI data. As examples, the following information is not intended to be all inclusive.

Use of the Data by the Office of Pollution Prevention and Toxics

With the voluntary cooperation of respondent facilities, EPA established the Industrial Toxics Project, also known as the 33/50 Program. EPA's 33/50 Program targeted 17 priority TRI chemicals for emissions reductions from 1988 reported levels of 33% by 1992 and 50% by 1995. More than 1300 companies nationwide joined the program which provided recognition to participating companies, including Certificates of Appreciation to all companies upon enrollment, as well as Certificates of

Environmental Achievement to a select group of facilities that achieved noteworthy reductions. Through collaborative partnerships between government, industry and the public, the program met its goals a year early and went on to exceed expectations by the end of 1995. EPA celebrated the program's success by hosting a national conference in September, 1996 and explored ways of building even more successful partnerships in the future with the use of the TRI data.

The Office of Pollution Prevention and Toxics (OPPT) is completing development of the Risk-Screening Environmental Indicators model which provides comparative information regarding the risk-related potential impacts of toxic chemical releases on human health and the environment. This multi-media, screening-level tool considers TRI release and transfer volumes, toxicity, exposure potential, and the size of receptor populations. Both generic and site-specific exposure characteristics are incorporated into the Indicators model. The Indicators may be used for trends analysis, as well as targeting and prioritization of TRI releases by chemical, release medium, industrial sector, individual facilities, geographic area, or a combination of these and other variables.

OPPT's Environmental Assistance Division (EAD) has developed software that contains health and ecotoxicity information on most of the section 313 chemicals. This software, called PC-TRIFACTS, enables the TRI data user to better understand the potential health and ecological effects of chemical releases identified in the TRI. TRIFACTS is available via the Internet through the TRI homepage.

From 1989 to 1991, OPPT prepared annual reports that summarized and compared current and historical TRI data. Beginning in 1992 the agency changed its approach and began presenting TRI data through annual *comprehensive* data releases. Each year, END develops two summary reports to distribute to the public at the time the complete national TRI database is released. One report summarizes the national TRI data, while the other provides detailed information on a state-by-state basis. These reports provide access to aggregate information which, in turn, helps facilitate efforts to track industries' progress in reducing emissions. It is also interesting to note that many states also issue summary reports for their state-specific TRI data each year.

OPPT's Pollution Prevention Division (PPD) has used TRI data as a screening tool to prioritize proposed regulations and industrial source categories to promote pollution prevention in rulemaking. As a result, the Pollution Prevention Senior Policy Council has identified a number of regulatory development efforts that should consider inclusion of pollution prevention measures.

Use of the Data by the Office of Air and Radiation

The Office of Air and Radiation (OAR) has used the TRI data for a variety of tasks related to the implementation of the Clean Air Act Amendments of 1990 (CAAA). Title III of the CAAA

requires EPA to develop Maximum Achievable Control Technology (MACT) standards for major sources of 189 hazardous air pollutants, all but 8 of which were on the TRI list of toxic chemicals prior to EPA's expansion of the EPCRA section 313 list of toxic chemicals. TRI was used to estimate the number of major sources (greater than 10 tons per year of any single hazardous air pollutant or 25 tons per year of total toxics) of hazardous air pollutants in each of 700 source categories. This information helped to prioritize the source categories for regulatory development. In addition, the impacts of a potential lower major source definition for 47 highly toxic compounds were analyzed using TRI data.

TRI was used to help identify the 30 hazardous air pollutants to be included in the Urban Area Source Program mandated by Section 112(k) of the CAAA.. OAR also has used TRI to expand the coverage of the "Locating and Estimating" series of documents, which help State and local air agencies identify potential source categories of air toxics in their communities. Similar data have been incorporated into the Crosswalk database, which identifies which source categories emit which toxic compounds. OAR is developing a series of air quality indicators to track progress in implementing the CAAA. Trends in the TRI data are envisioned to be a part of those indicators.

Use of the Data in Enforcement Activities

Because TRI data include detailed facility identification information, as well as releases to all media and transfers to off-site locations, the Office of Enforcement and Compliance Assurance (OECA) has found that TRI is particularly well-suited to multi-media enforcement and compliance planning, priority setting and inspection targeting. The OECA and the Office of Research and Development (ORD) are developing a "Multi-Media Ranking System" to prioritize sites for enforcement actions and to evaluate the effectiveness of environmental laws in reducing risks from sites. The system ranks sites based on their multi-media releases of pollutants, their potential risk to human health and the environment, and the history of legal violations by the facility. The system combines TRI data with data from EPA air and water databases.

OECA cross-checks data collected under EPCRA and other environmental statutes to identify those facilities or types of businesses which reported for some but not all of the reporting rules. Enforcement personnel are able to identify additional facilities owned by the same corporation or by the same parent company that may be subject to liability, by using TRI data and the Facility and Company Tracking System (FACTS).

In addition, OECA uses the TRI data in its EPCRA Targeting System (ETS), which provides local access to TRI and FACTS data for all facilities subject to EPCRA section 313 requirements. ETS supports creation of prioritized inspection targeting lists, generated from a wide array of selection criteria, and daily targeting activities such as contacts with facilities and tracking tips and complaints.

OECA also uses TRI data in the Integrated Data for Enforcement Analysis (IDEA) System. IDEA provides integrated data on individual facilities' compliance records for most of the statutes administered by EPA through access to approximately ten separate databases, including the Toxic Release Inventory System (TRIS). The TRI data aid OECA in developing enforcement initiatives by providing a point of departure for distinguishing between industrial sectors based on their potential for exceeding permits as indicated by the amounts of chemicals reported as managed in waste.

TRI data continue to be extremely helpful in identifying pollution prevention projects. Enforcement staff use data on releases and transfers to identify (or evaluate) projects that will significantly reduce emissions, or those that will help prevent or minimize the release of extremely hazardous substances under EPCRA section 302.

OECA places a high priority on enhancing the use of TRI data among Regional field personnel. Guidance has been provided to the field offices on the resources available to their inspectors in identifying non-reporters, late reporters and data quality errors. These resources provide the inspectors with valuable information extrapolated from the TRI, such as facility reporting rates, processes, and releases.

Use of the Data by the Office of Solid Waste and Emergency Response

TRI data assist in priority setting for waste minimization efforts by the Office of Solid Waste and Emergency Response (OSWER). In combination with other information OSWER collects on waste minimization, TRI data are useful in analyzing long-term trends and identifying particular industry practices that warrant attention by the program, serving OSWER pollution prevention goals.

With respect to enforcement, TRI data supplement other existing data sources and can be called on to assist in the development of OSWER enforcement priorities. TRI data also are valuable as a means to assist in establishing liability under both the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Resource Conservation Recovery Act of 1976 (RCRA) statutory authorities.

Another site-specific function of the TRI database relates to its role in providing emission information that can be used when developing emission inventories for the Superfund site discovery program and when undertaking Superfund preliminary assessments of sites. In the reportable quantity (RQ) program, TRI data could be used in analyses to support future rulemaking under CERCLA (e.g., designation of additional hazardous substances). In addition, states use TRI data in conjunction with other data obtained under EPCRA for local accident prevention planning.

Use of the Data by the Office of Water

The Office of Water (OW) has used TRI data for identifying candidates for the National Primary Drinking Water Regulations. Chemicals were identified that had a dramatic overall increase (doubling or more) of discharges and releases. These discharges and releases were considered to have direct potential for drinking water contamination and are good candidates for development of regulatory controls.

TRI data were used as a screening mechanism for possible sources of wellhead contamination. Using TRI and other relevant data in a Geographic Information System (GIS), potential contamination sources have been identified. These sources may affect community ground-water systems in the development and implementation of wellhead protection programs. Regions are continuing to coordinate ground-water programs using GIS and TRI data as a cross-program tool.

OW is also using the TRI data in development of management plans to identify the sources of toxic discharges into selected estuaries and coastal waters. In addition, the data are being used to identify sources of toxic discharges that may contaminate sediments that are proposed for ocean dumping.

Under the Watershed Protection Approach, the Regions are using TRI data along with other data in assessing loadings to their watersheds. They are identifying multi-media sources of toxic discharges to receiving waters.

The Office of Water Enforcement and Compliance (OWEC) used TRI data to identify industrial users that contributed the greatest amount of toxic pollutants to city sewer systems. Facility names were provided to the Regions for further evaluation.

OW used TRI data to identify which pollutants are released from pesticide manufacturing facilities and the pattern of releases when developing effluent limitations guidelines and standards for an industrial category. While many pollutants and industries that will be addressed by effluent guidelines are currently reported in TRI, the Effluent Guidelines Program screens for a number of pollutants not in listed in the TRI database.

OW used TRI data and other water emissions data in its National Sediment Contaminant Source Inventory, an evaluation of sources of sediment contamination in the U.S. This project identified point source pollutant discharges that may result in sediment contamination and analyzed these releases based on their potential sediment hazard. Chemical release amounts were weighted by the relative toxicity of a compound to aquatic or human health, as well as relevant fate and transport factors. The study identified chemicals, geographic areas, and industrial categories of greatest concern for sediment contamination.

Use of the Data by Other EPA Offices and Regions

Researchers from EPA's Office of Health Research recently published a study of national and regional differences in county-level TRI air emissions according to the ethnicity or race and household income of the populations. Using a measure known as a "Population Emissions Index", a population-weighted average emission for each county, the study found that all minority groups except Native Americans tend to live in counties where TRI air emissions levels are higher than they are in counties where non-minorities live. However, the data also suggest that household incomes tend to be higher in counties with higher TRI air releases.

EPA's Office of Information Resources Management sponsored the development of a Population Estimation and Characterization Tool, which uses GIS technology and demographic data for risk-based and environmental justice applications. The tool allows users to estimate and characterize populations within a given radius of a single TRI facility or multiple facilities and to identify areas of multiple potential exposure.

EPA's Office of Research and Development and Office of Enforcement and Compliance Assurance are developing a "Multi-Media Ranking System" to prioritize sites for enforcement actions and to evaluate the effectiveness of environmental laws in reducing risks from sites. The system ranks sites based on their multi-media releases of pollutants, their potential risk to human health and the environment, and the history of legal violations by the facility. The system combines TRI data with data from EPA air and water databases. For each site, the system develops a Chemical Ranking Factor based on chemical toxicity and fate information, a Vulnerability Ranking Factor based on the climate, soil type, and other environmental properties surrounding the site, and a Population Ranking Factor based on the demographic characteristics surrounding the site.

Use of the Data by Community and Public Interest Groups

Communities use TRI data to begin dialogues with local facilities and to encourage them to reduce their emissions, develop pollution prevention plans, and improve safety measures. Public interest groups use the data to educate the public about toxic chemical emissions and potential risk. A bibliography prepared by the Working Group on Community Right-to-Know in the summer of 1994 lists well over 100 state and local reports and more than 30 national TRI reports compiled by public interest groups (Orum and Wohlberg, 1994). A few of these reports, and other activities conducted by public interest groups, are described below.

C "Manufacturing Pollution", a report produced by Citizen's Fund in August 1992, aggregated 1990 TRI data from different facilities by their parent company, in order to hold corporations more accountable for the full extent of their toxic pollution. The report summarized releases of

all TRI chemicals, as well as subsets of chemicals that could cause cancer or birth defects (Citizens Fund, 1992).

- "Poisons in Our Neighborhoods", a report produced by Citizen's Fund in November of 1993, summarized 1991 TRI data nationally and by state. The report attempted to measure the progress of manufacturers in preventing pollution and included report cards evaluating the pollution prevention efforts and performance of the top 50 waste generating facilities in the chemical industry (Citizens Fund, 1993).

- "Troubled Waters: Major Sources of Toxic Water Pollution", a report released by the U.S. Public Interest Research Group in June 1993, examined TRI releases to surface waters and to publicly-owned sewage treatment plants and identified the nation's top releasers of toxics to those water sources. The report made recommendations for amending the Clean Water Act to provide the public more information about toxic releases to waterways and to strengthen enforcement (Hartmann, 1993).

- "Where the Wastes Are", a report released by OMB Watch and the Unison Institute in April 1994, examines facilities receiving the largest quantities of shipments of TRI chemicals in waste. The report identifies the largest off-site recipients overall and in particular categories, such as incinerators and landfills. The report also profiles certain companies active in the operation of these toxic waste management facilities (MacLean and Puchalsky, 1994).

- The Georgia Environmental Policy Institute provided TRI data to a family in southwest Georgia who needed information about toxic releases from a nearby plant to assist their doctor in determining the need for medical testing. Following an incident and evacuation, this same group also provided TRI data to a citizen who inquired about toxic releases from a plant located next to a school (McLure, 1994).

- After an analysis of 1987 TRI data revealed that an IBM plant in the "Silicon Valley" area discharged the largest quantities of ozone-depleting chlorofluorocarbons (CFCs) in California, a public interest group organized a campaign to reduce those emissions. Within months, senior management at IBM had pledged to completely eliminate the use of CFCs in their products and processes at the plant by 1993 (Tryens *et al*., undated).

- Following the release of an environmental group's report identifying a local facility as the 45th-largest emitter of carcinogens to air in the nation, community activists in Northfield, Minnesota worked with the Amalgamated Clothing and Textile Workers Union to call for emissions reductions. Contract negotiations between the union and the facility resulted in an agreement

for a 64% reduction in the use of toxic chemicals by 1992, and a 90% reduction in toxic emissions by 1993 (Settina and Orum, 1991).

C In 1993, the Minnesota Citizens for a Better Environment released a report profiling the state's "top 40 toxic polluters" based on emissions of certain priority chemicals. In addition to TRI data, the report provided other information such as: the facilities' compliance histories; maps of major streets, schools, health care facilities, and water bodies in the area; information about local populations; contact information for facility representatives, government representatives, civic associations, and other organizations; and toxicity information. The report was designed to provide enough information to support local efforts to negotiate with facilities for emissions reductions. Since publication, activists have worked with 18 of the 40 facilities identified in the report (Doer, 1995).

C After TRI data identified Syntex Chemicals in Boulder as a top Colorado polluter, extensive publicity led to negotiations between local activists and the facility concerning emissions reductions. After a lengthy process that involved the facility's corporate headquarters, the facility signed a good neighbor pledge to reduce its air toxics emissions 50% by 1994 from 1989 levels. The facility also agreed to set up a community advisory panel to facilitate communications between the facility and the community (Settina and Orum, 1991).

C In March 1993, the Texas Network for Environmental and Economic Justice published a report entitled "Toxics in Texas and Their Impact on Communities of Color". This report used TRI and other data to document disproportionate environmental impacts on racial and ethnic minority communities in Texas. The report includes case studies, maps, relevant legal and institutional information, and recommendations (Texas Network for Environmental and Economic Justice, 1993).

Use of the Data by National, State, and Local Government Agencies

National, state and local governments use TRI data to set priorities and allocate increasingly scarce environmental protection resources to the most pressing problems. Regulators use the data to set permit limits, measure compliance with those limits, and target facilities for enforcement activities. The U.S. Internal Revenue Service used TRI data to identify companies releasing CFCs in order to enforce a tax imposed on releases of CFCs (Smith, 1992).

TRI data has provided the impetus for passage of pollution prevention laws in many states. However, states have used TRI data in many ways other than regulating industry. The following are some examples of how various states have used the TRI data.

- Louisiana's Environmental Leadership Pollution Prevention Program is a statewide emissions prevention and reduction program that seeks a 45% reduction in toxic chemical emissions by 1997, using 1992 data as a baseline. The program sponsors the Governor Awards for Environmental Excellence to promote public recognition of industry achievements (U.S. EPA, 1993b)

- A researcher in Louisiana developed a method for normalizing the TRI data to allow comparisons among facilities, industries and states to help evaluate the comparative effectiveness of pollution control strategies, policies and programs. The method calculates an "emissions to jobs ratio", the number of pounds of emissions per job in a given industry and location. This ratio is then compared to a national or other average to determine relative performance. It also can be tracked over time to evaluate improvement. The "environment-to-jobs" ratio was included in an environmental scorecard which was developed and implemented to modify tax exemptions granted to facilities to encourage and reward job creation. If a facility's environmental score (including the "environment-to-jobs ratio") was low, the amount of the tax exemption could be decreased (Templet, 1993).

- The states of Kentucky, Ohio, and West Virginia have joined together in a "Tri-State Initiative" to identify, prevent and remediate environmental threats in an area known for its industrial base and its susceptibility to air inversions. Program coordinators are using a risk assessment process to focus on sources of greatest concern. The program will use voluntary industry commitments and cooperative efforts between industry, the public and government to achieve reductions in releases of TRI chemicals and criteria air pollutants (U.S. EPA, 1993b).

- The Pollution Prevention Program of the Colorado Department of Public Health and the Environment used TRI data, in combination with other air and water emissions data and hazardous waste data, to identify 10 industry groups which are responsible for the largest quantities of hazardous waste generation or toxic emissions in the state. This study will serve as the basis for establishing priorities for pollution prevention activities and for distribution of technical assistance grants. The report also will be used to target large companies for participation in a Governor's Pollution Prevention Challenge Program to reduce toxic emissions and hazardous waste generation (Kolwey and Lynch, 1994).

- The New Jersey Department of Environmental Protection and Energy used TRI data in a computerized Geographic Information System (GIS) in order to prioritize facilities and geographic areas for implementation of pollution prevention measures. A grid system of 2 mile by 2 mile cells was used for aggregation of air releases and land releases. Minor watersheds were used to aggregate and map water releases. In order to study the cumulative impact of

many releases in the area, chemicals were grouped based on health and environmental effects (Cummens, 1993).

- The Pollution Prevention Division of the state of Georgia's Department of Natural Resources used TRI data in the process of identifying the technical assistance needs of manufacturing sectors that generate chemicals posing the greatest relative risk to public health and the environment. First, the Division prioritized chemicals based on toxicity and regulatory factors. The Division then examined manufacturing sectors releasing the highest priority chemicals and identified particular subsectors for further assessment. The program is now conducting in-depth manufacturing sector assessments, including focus groups and site visits, to determine what processes produce the wastes, what multi-media waste problems exist, what pollution prevention activities are currently being undertaken, and what additional opportunities exists (Donaghue, 1995).

- TRI data helped spur the Louisiana state legislature to require the state Department of Environmental Quality to issue regulations identifying 100 priority pollutants, setting emissions standards for those pollutants, and targeting a 50% emissions reduction from 1987 levels by 1994 (Tryens, *et al*., undated).

- A public interest group report on unregulated air toxics emissions in North Carolina led the state's Environmental Management Commission to set limits for 105 air pollutants (Tryens, *et al*., undated).

- New York State's Department of Health developed a risk screening protocol which uses TRI air release data to produce relative risk rankings for facilities and chemicals within the state. The procedure combines air emissions data and toxicity potency data to give a quantitative risk screening score for each facility. Three separate rankings were developed, based on carcinogenicity, non-cancer endpoints, and a combination of both factors. The results of these rankings suggested to the Department of Health that there is a need for more careful evaluation of potential health effects resulting from large releases of noncarcinogenic compounds such as respiratory irritants and small releases of very potent inorganic carcinogens (Recer and Johnson, 1995).

Use of the Data by the Financial and Business Communities

Increasingly, investment analysts use TRI data to provide recommendations to clients seeking to make environmentally sound investments. Insurance companies look to TRI data as one indication of potential environmental liabilities. Consultants and others use the data to identify business opportunities, such as marketing pollution prevention and control technologies to TRI reporting facilities. Demand for

environmental performance information by investors, insurance companies, and the public has led many companies to develop environmental annual reports similar to annual reports on financial performance traditionally prepared for investors. EPA supports this use of TRI data. The Agency understands, however, the suggestions made by some submitters to better represent to the public the differences among the various activities included within the generic "release" categories. EPA will be making changes to reporting form R which will help the public to identify, for example, the amount of a chemical released to a permitted Class C landfill or a release to an underground injection (class I well) program facility, as opposed to describing those disposal methods only as release to the land.

- The Clean Yield Group, an investment portfolio management group, compares companies' TRI release data to their industry averages of pounds of toxic chemicals per dollars of sales. This serves as a rough yardstick to gauge how the company measures up against other companies in its industry, and allows the investment firm to track how the company's release performance is improving from year to year (Hausman, 1993).

- The Investor Responsibility Research Center, Inc., a not-for-profit research organization for institutional investors, uses TRI data in developing its Corporate Environmental Profile Directory. This directory presents quantitative, consistently-derived data that allows investors to evaluate and compare corporate environmental performance. The corporate profiles include TRI release and transfer data, as well as an "Emissions Efficiency Index" which compares toxic chemical emissions to the company's domestic revenue (Chines, 1994).

- A leading popular business magazine used TRI data as a central element in compiling a "green index" of America's biggest manufacturers. The magazine examined companies' environmental records and developed a relative ranking system that assigned companies scores from zero to 10 in 20 different performance categories, including the amount of toxic emissions per dollar value of sales, and their percent reduction in toxic chemical emissions. The article included lists of 10 leading companies, 10 "laggard" companies, and 10 most improved companies (Rice, 1993).

Use of the Data by the Regulated Community

Industry sources have indicated that the public availability of the TRI data has led many corporations to publicly commit to voluntary emission reductions. The first of these pledges was Monsanto's 1989 commitment to reduce its worldwide air emissions of toxic chemicals by 90% by 1992. Many other companies, including AT&T, Dow Chemical, Dupont, Merck, and 3M, soon followed with their own reductions goals (MacLean and Orum, 1992). In addition to providing the impetus for these reductions pledges, the TRI data also provide the public with the measurement tool

needed to track companies' progress, as well as providing the companies a means of demonstrating their commitment and success.

As another example, the Iowa Association of Business and Industry coordinates a community-wide pollution prevention initiative in the Des Moines-Polk County area. The group adopted goals of a 60% reduction of all TRI chemicals by 1992 and a 70% reduction by 1995 (U.S. EPA, 1993b).

Use of the Data by Education and Research Institutions

The TRI data are being used in many environmental education programs, particularly at the high school and university levels. Students learn about toxic chemical releases, the potential health and environmental effects of those releases, pollution prevention activities and opportunities, and the social and political aspects of environmental protection. Some organizations also are conducting educational outreach programs using TRI data. For example:

- Students in the Environmental Studies Department at Dickinson College (Pennsylvania) use TRI data to conduct toxic waste audits on communities or facilities. Students identify epidemiological and environmental health effects, occupational exposure standards, and other relevant information. Students arrange plant tours which focus on toxic chemical use reduction and "good neighbor" agreements between facilities and communities. Students also meet with local citizens, environmental organizations, labor unions and others (“Notes From the Field,” 1992).

- The John Snow Institute Center for Environmental Health Studies has developed a tutorial entitled "Environment and Health: How to Investigate Community Environmental Health Problems". This tutorial introduces the public to TRI and other resources which can be used to identify and address local pollution sources. Audiences include librarians, local officials, members of the media, environmental advocates, the general public, and students from high school to graduate level (Greene, 1995).

- Researchers at the University of California, Santa Barbara's Center for Geographic Information and Analysis used 1989 TRI data and 1990 U.S. Census data to examine and map significant relationships between the race and income of populations and their proximity to TRI sites in Los Angeles (Burke, 1993).

The data use examples presented above illustrate the current widespread use of TRI data by a broad array of constituents. Interest in and use of the data are continuing to grow.

3. THE RESPONDENTS AND THE INFORMATION REQUESTED

3(a) Respondents/SIC Codes

The statute applied the reporting requirement to owners and operators of facilities that have 10 or more full-time employees, manufacture or process more than 25,000 pounds or otherwise use more than 10,000 pounds of a listed chemical, and are in Standard Industrial Classification (SIC) codes 20 through 39. The SIC code determination applies to all operations within each two-digit category, including all sub-categorizations to the four-digit level. In addition, in May, 1997, EPA issued a final rule that expanded the TRI reporting requirements to facilities in seven industries outside of the manufacturing sector. A detailed listing of the four-digit SIC codes and categories can be found in Table I of Attachment A (Toxic Chemical Release Inventory Reporting Forms and Instructions). The following identifies the SIC codes and corresponding categories at the two and four-digit level:

SIC Code	Industry Group
10	Metal Mining (except 1011,1081 and 1094)
12	Coal Mining (except 1241)
20	Food
21	Tobacco
22	Textiles
23	Apparel
24	Lumber and Wood
25	Furniture
26	Paper
27	Printing/Publishing
28	Chemicals
29	Petroleum
30	Rubber and Plastics
31	Leather
32	Stone, Clay, and Glass
33	Primary Metals
34	Fabricated Metals
35	Machinery (ex. electrical)
36	Electrical/Electronic Equipment
37	Transportation Equipment
38	Instruments
39	Miscellaneous Manufacturing
4911, 4931	Electric Utilities (limited to facilities that combust coal and/or oil for the purpose of generating electricity for distribution in commerce.)

or 4939	
4953	Commercial Hazardous Waste Treatment (limited to facilities regulated under RCRA Subtitle C, 42 U.S.C. section 6921 et seq.
5169	Chemical Allied Products-Wholesale
5171	Petroleum Bulk Terminals and Plants-Wholesale
7389	Solvent Recovery Services (limited to facilities primarily engaged in solvents recovery services on a contract or fee basis).

Establishments that are part of a multi-establishment facility have the option to report separately, provided that all of the releases and waste management data from all of the establishments in that facility are reported.

3(b) Information Requested

(i) Data Items

Reporting Requirements for Form R. Form R consists of two major parts. Part I is for facility identification information such as the name, address, and other identifying information including permit numbers. Part II is for chemical-specific information, such as the identity, uses at the facility, quantification of the releases and off-site transfers of the chemical, on-site waste treatment methods and efficiencies, and the new source reduction and recycling data.

Form R - Part I. Part I contains five sections. The first section is for identification of the reporting year. The second section is for indication if the toxic chemical is claimed as a trade secret. The third section is a certification statement -- the statute requires a senior official with management responsibility for the person or persons completing the form to certify that the information provided in the form is accurate and correct.

The fourth section is for the identification of the facility and its location. As part of the location information, EPA requires the facility to provide business-related specifics such as its Dun and Bradstreet number and the primary four-digit SIC code. This section also requires the number of the facility's National Pollutant Discharge Elimination System (NPDES) permit, if the facility has been issued one, the facility's underground injection control (UIC) code, and, if applicable, its EPA Identification number. The fifth section is for identification of the respondent facility's parent company, if applicable, and that parent company's Dun & Bradstreet Number.

Form R - Part II. Part II contains eight sections. The first two are for identification of the chemical or the mixture component. Respondents must identify the chemical or chemical category being reported by the listed name and by the Chemical Abstract Service (CAS) registry number, if

applicable. If the facility claims that the specific chemical identity is a trade secret, the respondent must enter a generic name in Section 1.3.

The third section is for identification of the use or uses of the chemical: manufacture, processing, or otherwise use. The fourth section requires an estimate of the maximum amount of the chemical present at the facility at any time during the calendar year. Ranges identical to those implemented in Sections 311 and 312 are used.

The fifth section covers all on-site releases of the chemical to the environment. This includes fugitive and stack air emissions, discharges to streams or other water bodies, underground injection, and releases to land such as to landfills and surface impoundments. The respondent also is required to indicate the basis or technique for estimating those releases. When reporting releases to water bodies, facilities report the name of the body along with the quantity released in Section 5.3.

EPA has subdivided section 5.4 into two parts: 5.4.1: underground injection into class I wells: and 5.4.2: underground injection into class II-V wells. Section 5.5.1, landfills, is subdivided into 5.5.1.A: disposal to RCRA subtitle C landfills and 5.5.1.B: disposal to other landfills.

The sixth section requires respondents to quantify all transfers of the chemical to publicly-owned treatment works (POTWs) and other off-site locations (including other wastewater treatment facilities, and recycling, treatment, or disposal facilities). Section 6 also requires the name and location of all POTWs and other off-site locations to which the chemical is sent for the purposes of recycling, treatment, or disposal facilities that accept chemical wastes from the respondent facility. For other off-site facilities, the RCRA ID number (if applicable) and an indication of whether each such facility is under the control of the reporting facility also is reported.

Section 7 of Form R consists of three subsections. Section 7A is for reporting on-site waste treatment methods and efficiencies. A characterization of the type of waste stream, the waste treatment method(s) applied to that waste stream, and the efficiency of those methods is required. Section 7B is for reporting the methods of energy recovery used on-site. Up to four codes identifying the appropriate activities can be entered. Section 7C is for reporting the methods of recycling used on-site. Up to ten codes can be entered.

Section 8 of the form is for reporting the majority of the source reduction and recycling information as mandated by section 6607 of the PPA. Beginning with the 1991 reporting year, Section 8 is a required section of Form R and must be completed. Section 8 reporting includes on-site and off-site quantities of the toxic chemical released (including disposal), used for energy recovery, recycled, or treated. Quantities are reported for both the current reporting year and the prior year, as well as quantities anticipated in both the first year immediately following the reporting year and the second year

following the reporting year. In addition, Section 8 includes reporting on quantities of the toxic chemical released due to remedial actions, catastrophic events, or other one-time events not associated with production; a ratio of reporting year production to prior year production, or an activity index based on a variable other than production; source reduction activities implemented during the calendar year for the reported toxic chemical; and the method used to identify the source reduction activity. Facilities also must indicate whether additional optional information is being submitted on source reduction, recycling, or pollution control activities.

Proposed Changes to Reporting Form R for 1999 Reporting Year. In the July 28, 1999 Federal Register notice, EPA requested comment on two minor changes to the reporting Form R. The first change is to Section 4.5, which requests that facilities identify their SIC code. EPA is proposing to add the term "primary" in the first SIC code box in order to make clear that the first SIC code entered should be the facility's primary SIC code. The Form R instructions directs reporters to enter the primary SIC code first, but this is not clear on the form itself. EPA has found that many facilities do not enter their primary SIC code first, even though they are directed to in the instructions. This change should help rectify that problem and enable the Agency to conduct more accurate analyses on an industry sector-specific basis.

The second proposed change on which the Agency requested comment is in Section 7A of the Form R: ON-SITE WASTE TREATMENT METHODS AND EFFICIENCY. EPA was proposing to add a column f which asks, "How many individual waste streams does this apply to?". After review of the comments received to this ICR renewal, EPA has decided to go forward with the first proposed change to Form R: Adding the term "primary" to the first SIC code box in Section 4.5 to indicate that a facility's primary SIC code should be entered there. The Agency decided that changes to Section 7A (On-Site Waste Treatment Methods and Efficiency) of the Form R are not necessary at this time.

Proposed Changes to Reporting Form R for Year 2000 Reporting. On October 29, 1999, the Agency finalized a rule that lowers the reporting threshold for PBT chemicals, and adds certain PBT chemicals to reporting under section 313 of the Emergency Planning and Community Right-to-Know Act. Under the rule, if a facility has information on the distribution of dioxin or dioxin-like compounds, the facility must report either the distribution that best represents the distribution of the total quantity of dioxin released to all media from the facility or its one best media-specific distribution. The following change will be made to Form R for year 2000 reporting to reflect the requirements of the PBT rule. Under Part II, Section 1.Toxic Chemical Identity, Item 1.2 Toxic Chemical or Chemical Category Name, a space will be provided for facilities to report information on releases of dioxin or dioxin-like compounds.

Reporting Requirements for Form A. On November 30, 1994 (59 FR 61488), EPA promulgated the alternative threshold rule which allows a facility which manufactures, processes, or

otherwise uses 1 million pounds or less of a chemical annually, and if 500 pounds or less of that chemical is present in their annual reportable release amount, then the alternate threshold reporting option, TRI reporting Form A, is available to that facility for a specific chemical. An annual reportable amount is defined as the combined total quantities released at the facility, treated at the facility (as represented by amounts destroyed or converted by treatment processes), recovered at the facility as a result of recycle operations, combusted for the purpose of energy recovery at the facility, and amounts transferred from the facility to off-site locations for the purpose of recycling, energy recovery, treatment, and/or disposal.

Although a company reporting using Form A would basically report a subset of the information collected on Form R, the reporting and recordkeeping requirements associated with the alternate reporting requirement using Form A are contained in a separate ICR approved under OMB Control #2070-0143 (EPA ICR #1704).

Recordkeeping. Facilities must keep a copy of each Form R and Form A submitted for at least 3 years from the date of submission. Facilities also must maintain the documents, calculations, and other information used to prepare the reports. Documents and records that facilities keep to prepare a report submitted may include, but are not limited to:

- Prior years' Form Rs;
- Inventory data and purchase records;
- Process diagrams that indicate releases and waste management activities;
- Monitoring records;
- Flowmeter data;
- Manufacturer's estimates of efficiencies;
- Worksheets, engineering calculations, and other notes;
- NPDES permits and associated data;
- EPCRA Section 312 Tier II reports;
- Pretreatment reports when applicable;
- RCRA manifests;
- RCRA Hazardous Waste Generator's Report; and
- Invoices from waste management companies.

(ii) Respondent Activities

EPA makes Form R, the Form A, and detailed instructions and guidance documents available to owners or operators of facilities subject to the section 313 reporting requirements. In addition, a toll-free hotline is available to handle general and technical inquiries from the regulated community. Technical assistance also is available through the EPA Regional offices and States. The regulated community is expected to comply with the reporting requirements by completing either the Form R or

the Form A and mailing it to EPA and the appropriate state agency. Section 313(g)(2) provides that a "facility may use readily available data (including monitoring data) collected pursuant to other provisions of law, or where data are not readily available, reasonable estimates of the amounts involved." Respondents are not required to develop new information. The following are the respondent activities and are briefly summarized below:

- Compliance Determination
- Report Completion (Compliance)
- Substantiation of a Trade Secret Claim
- Recordkeeping/Disclosure
- Supplier Notification
- Petition Submission (not a requirement)

Compliance Determination. Facilities must first determine if they are required to submit a Form R or are eligible to submit a Form A. The determination is based on the SIC code(s) for the facility, the number of full-time employees or equivalents, and the quantities of listed toxic chemicals manufactured, processed, or otherwise used at the facility. For facilities contemplating using the Form A, for each toxic chemical facilities also must determine the sum of amounts in total waste and determine that they did not manufacture, process, or otherwise use more than 1 million pounds of the listed toxic chemical. Assistance with compliance determination and Form R completion is available through the States and the EPA Headquarters and Regions.

Report or Form Completion (Compliance). Once a facility has determined that it must comply with the statute, it must submit either a Form R or, if eligible, a Form A for each reportable chemical. The basic procedures for reporting are detailed in the regulations at 40 CFR 372 and described in the Reporting Forms and Instructions (Attachment A).

Substantiation of a Trade Secrecy Claim. If a submitter claims that the identity of a chemical is a trade secret, the submitter must support that claim. As the intent of the statute is public disclosure, the burden is upon industry to prove that certain data must be withheld from the public. Information must be provided to EPA that indicates that the identity has not been already revealed, that a competitive advantage would be lost if the identity were revealed, and that reverse engineering could not be performed to reveal the true identity of the substance if trade secrecy was granted. Trade Secrecy Substantiation, including the burden and costs to industry, is discussed in greater detail in the ICR for the Trade Secrecy Rule for EPCRA (EPA ICR #1428, OMB #2050-0078).

Recordkeeping/Disclosure. Respondents are required to maintain records up to three years. Respondents are not required to disclose any information directly to the public.

Supplier Notification. Suppliers of facilities in SIC codes 20-39 are required to develop and distribute a notice if the mixtures or trade name products they manufacture or process, and subsequently distribute, contain listed toxic chemicals. These notices are distributed to companies in SIC codes 20-39 or to companies that sell or otherwise distribute the product to facilities in SIC codes 20-39.

Petition Submission. EPA issued statements of petition policy and guidance in the Federal Register on February 4, 1987 (52 FR 3479) and on May 23, 1991 (56 FR 23703). Petitioners may submit, in writing, a request to either add or delete a chemical to or from the section 313 list. The petitioner may include in this request evidence that the chemical either meets or does not meet the criteria established for inclusion on the section 313 list. Submission of a petition thus may involve a literature search and compilation and presentation of the findings to the Agency. Petition submission is not an activity that is required of regulated entities, but the burden estimates for filing a petition are included in this ICR.

4 THE INFORMATION COLLECTED--AGENCY ACTIVITIES, COLLECTION METHODOLOGY, AND INFORMATION MANAGEMENT

4(a) Agency Activities

EPA engages in many activities to fulfill the requirements of EPCRA. These activities can be grouped in the following categories which cover what the Agency does to assist the regulated community with compliance, process the data, maintain the database, and make the data available.

- Assistance to Respondents
- Data Processing and Quality Control
- Making Data Available
- List Revisions and Petition Reviews
- Trade Secrecy Reviews

Assistance to Respondents. The Agency has operated a successful outreach program to assist businesses in obtaining and completing both the Form R and Form A. A reporting package that is updated annually is distributed directly to all TRI respondents. This package also is made available to potential respondents through EPA's TRI website, Regional office coordinators and the EPA publications distribution center. The package contains reporting forms with detailed instructions along with a magnetic media software package that allows reporters to submit their data on computer diskettes. General guidance on estimating releases, as well as industry-specific guidance documentation has been prepared for eighteen different industries.

EPA also has established a training program designed to familiarize Regional personnel with the reporting requirements and to train them in providing technical assistance to respondents. Using that training, the Regions have conducted and continue to conduct numerous workshops each year to explain the reporting requirements to the regulated community. EPA also has established a training program to teach EPCRA section 313 reporting requirements to private businesses and consultants that wish to provide counsel on section 313 compliance. As previously mentioned, EPA operates a toll-free hotline to answer general questions and direct potential respondents to proper EPA personnel. In addition, the agency maintains a website with current program-specific information and guidance.

EPA has also provided guidance for persons or organizations interested in petitioning the agency to add or delete chemicals from the TRI list. In addition to this guidance, EPA also convenes pre-petition meetings to assist petitioners if they request such assistance.

Data Processing and Quality Control. When TRI reports are submitted on paper, the information is keyed into a database on a PC-based local area network (LAN). Automated data quality checks begin at data entry, including various edit checks and the start of normalization of some of the data fields. At this point, emphasis is placed on identifying forms that are not completed correctly. If the problem(s) identified prevent further processing of the form, EPA sends a Notice of Significant Error to the respondent. Notices of Technical Error are sent to the respondents identifying any errors and requesting corrections.

At this stage, EPA also loads data from those facilities that have provided their Form R submissions on magnetic media. Many data quality checks are incorporated into the magnetic media reporting package.

EPA continues to place a high emphasis on data entry accuracy within the TRI. EPA's internal review of approximately 4% of the records showed a data entry accuracy rate of over 99.9%. This is up from 97.5% for the 1987 reporting year. EPA continues to conduct the computerized edit checks at the point of data entry, including a high percentage of verification and data reconciliation activities. EPA mails a print-out of the on-site release and off-site transfer estimates as entered in the database to all reporting facilities to allow them to verify the entered data. The use of magnetic reporting greatly reduces the risk of errors that may occur during data use. Use of the reporting software has continued to increase to a rate of nearly 70 percent for reporting year 1997–the most current year for which statistics are available. This compares to 53% magnetic media submissions for reporting year 1993. EPA is continuing to encourage the use of magnetic media by all submitters.

Once on the LAN, the data are uploaded to the mainframe, where further data quality checks are made. These operations involve continued normalization of name fields, such as county names, insertion of missing latitude and longitude coordinates along with checks with other data.

Congress requires EPA to make TRI data available to the public through computer telecommunications. As a result, EPA has found it necessary to undertake a variety of activities to make the data more usable. This is due to the fact that computer searches only retrieve data in exactly the format requested. Because facilities report their data in a wide variety of ways, EPA has taken steps to use a consistent name for all counties, used a variety of nomenclature standards for names within the database, added latitude and longitude representing the center of the zip code area in which the facility is found, and has taken other steps to assist in the normalization of the data.

EPA generates a facility identification number for newly reporting facilities at the time of data entry. This allows linkage to all years of reports for a particular facility or location. The identification number also allows easy retrieval of cross-year data, even when a facility is sold or changes its name. This number has been sent to all facilities and they are required to use it on all future submissions submitted to the Agency. Use of the facility identification number also facilitates data quality and cross-year analysis.

Under EPCRA section 313, facilities are required to submit forms both to EPA and the state in which they operate. For additional quality assurance and tracking purposes, EPA provides all states with a listing of facilities that reported to the Federal Reporting Center for each reporting year. This activity typically results in the identification of several cases where facilities had not reported to one or the other government. Many states then provide copies of forms to the EPA where EPA had not received copies, and vice-versa. This activity has provided a critical step to assist EPA in coordinating the data collection with the states and completing both data repositories.

The survey of the 1988 data focused on facilities in Standard Industrial Classification (SIC) codes 28 (chemical manufacturing), 29 (petroleum refining), and 34 (metal finishing and fabrication). Ninety facilities were visited. The aggregate 1988 release estimates in these industries were more accurate than their 1987 estimates, since their aggregate 1988 estimates were found to be approximately equal to the estimates calculated by the EPA contractor.

For the 1987 and 1988 reporting years, in a different type of survey, EPA also identified approximately 1,800 forms with suspect release data and telephoned facilities to discuss how to improve and correct their estimates. The information from this survey was also used to improve the reporting instructions and technical guidance.

Ensuring the accuracy of the on-site release and off-site transfer estimates is an on-going effort, and includes comparison across reporting years as well as use of data and evaluations based on facility site visits. EPA conducted a data quality site survey of 104 facilities for reporting years 1994 and 1995: 25 facilities in SIC code 25 (furniture manufacturing) for 1994; 19 facilities in SIC code 281 (inorganic chemical manufacturing) for 1994; 17 facilities in SIC code 285 (paint manufacturing)

for 1994; 23 facilities in SIC code 30 (rubber and plastics manufacturing) for 1994; 10 facilities in SIC code 26 (pulp and paper manufacturing) for 1995; and 10 facilities in SIC code 286 (organic chemical manufacturing) for 1995. Following are some of the major findings of the site survey: 1) Facility and site surveyor release estimates were in good agreement, calculated to be within ±3%. 2) Facilities primarily used purchasing records to make threshold determinations. 3) Facilities in chemical manufacturing used production data more frequently to make threshold determinations. 4) Facilities in chemical manufacturing were more likely to assume thresholds were exceeded and because of that they had the highest error rate, primarily for reporting chemicals that did not exceed thresholds. 5) Container residue was the most commonly overlooked release source.

Making TRI Data Available. Many options are available for accessing TRI data. EPA offers the data in a variety of common computer and hard copy formats to ensure that everyone can easily use the information. TRI is available on diskette, CD-ROM, and computer bulletin boards. While TRI data have been available from several computer-based sources, recent system conversions, processing efficiencies, improvements in web-based access, along with Year 2000 compliance concerns have created a need for a primary source for accessing TRI (and other agency) data. Therefore, EPA has shifted its focus to the Envirofacts system to address this need. TRI data will be updated in the Envirofacts system at a more frequent rate than previously possible allowing the user community access to virtually "live" TRI data.

TRI reports are also available from state government offices as well as from EPA. For each reporting year, many states make their data available before EPA releases data from the national database. Persons interested in receiving state specific information may call their state EPCRA Coordinator or EPA Regional TRI Coordinator for assistance.

List Revisions and Petition Reviews. The list of toxic chemicals subject to reporting under section 313 of EPCRA is not static. The list can be modified by Agency-initiated reviews of chemicals or by public petition. If a listing petition is submitted by a State governor, then EPA must respond within 180 days by either publishing an explanation of denial or granting the petition. If EPA does not respond within 180 days the chemicals are automatically added to the toxic chemical list. Once a petition is received, EPA begins an intensive review that includes chemistry and toxicity analyses of the chemical or chemicals. Depending on the toxicity of the chemical or chemicals, EPA's review also may include exposure, economic, and engineering analyses. If the chemical meets the criteria for addition to the list, it is added or maintained on the list. If the criteria are not met, then the chemical is removed from the list. The criteria for inclusion on the list are stated in section 313(d)(2): the chemical is known to or can reasonably be anticipated to cause significant adverse acute human health effects at concentration levels that are reasonably likely to exist beyond facility site boundaries as a result of continuous, or frequently recurring, releases; the chemical is known to cause or can reasonably be anticipated to cause in humans cancer or teratogenic effects, or serious or irreversible reproductive dysfunctions, neurological disorders, heritable genetic mutations or other chronic health effects; or the

chemical is known to cause or can reasonably be anticipated to cause a significant adverse effect on the environment because of its toxicity, its toxicity and persistence in the environment, or its toxicity and tendency to bioaccumulate in the environment.

Since the list was first published, there have been 332 additions (including 6 chemical categories) to and 19 deletions or modifications (including modifications to two chemical categories) from it, and several delisting petitions are pending. Two hundred ninety-one of these additions (including 4 chemical categories) are the result of Agency-initiated rulemakings. Four of the deletions or modification, including acetone, sodium hydroxide (solution), sodium sulfate (solution), hydrochloric acid (non-aerosol), and sulfuric acid (non-aerosol), were high production volume chemicals, which greatly reduced the reporting burden on industry. In general, previous petitions have been submitted for single chemicals, however, a recent increase in petitions for groups of chemicals has occurred. EPA may list the chemicals as a category or add only those individual chemicals which meet the section 313(d)(2) criteria.

Trade Secrecy Reviews. When a respondent claims a chemical identity as a trade secret, a substantiation must be included. Occasionally respondents claim trade secret status on Form R, but do not provide substantiation. In those cases, EPA must review the claim and contact the respondent to determine the true intent. In many cases, the trade secret claim was not intended and no substantiation is made. Trade Secrecy reviews, including the costs to EPA, are discussed in greater detail in the ICR for the Trade Secrecy Rule for EPCRA (EPA #1428, OMB #2050-0078).

4(b) Collection Methodology and Management

EPA continues to encourage the use of submissions on magnetic media. The use of magnetic media is intended to reduce both the cost and the time required to enter, process, and make available the data, although is may also reduce the reporting burden on industry. Submission by magnetic media also improves data quality because of automatic checks that highlight errors or omitted data. As an additional step in improving user's ability to report using magnetic media, EPA has made the Form A available on magnetic disk and CD-ROM.

4(c) Small Entity Flexibility

The statute provides that facilities with less than 10 full-time employees (or equivalent) are not required to report. In addition, EPA has taken several steps to minimize the burden for small businesses. A range reporting option was added to the February 16, 1988 final rule (53 FR 4500) that codified the EPCRA section 313 reporting requirements. Range reporting was the preferred option from the Regulatory Flexibility Act analysis to provide burden reduction for small businesses. Range reporting provides an option for releases of less than 1,000 pounds to be recorded as a code

representing one of three ranges, 1 to 10 pounds, 11 to 499 pounds, or 500 to 999 pounds, rather than as a specific estimate of the release amount. The benefit is not, however, limited to small businesses.

In addition, in response to a petition from the Small Business Administration, EPA has promulgated the alternate threshold (November 30, 1994, 59 FR 61488) discussed above. Although any reporting facility meeting the criteria may use the alternate threshold, it is thought that this alternate threshold will be most advantageous to small entities.

In addition, EPA is developing interactive, intelligent, user-friendly software called "Toxics Release Inventory Made Easy Software (*TRI-ME*)," that asks the user simple, straightforward questions to help the user determine if the facility is subject to TRI reporting. *TRI-ME* will greatly reduce data quality errors and therefore, reduce the likelihood of a facility being in violation of the reporting requirements, or having to subsequently submit corrections.
Given the extensive stakeholder dialogue that we have historically provided and believe should continue to be provided for industry-specific reporting assistance, we suggest that the software first focus on three industries: chemical distribution facilities and petroleum storage facilities, both newly added industries that are composed mainly of smaller businesses; and foundries, one of the larger industry sectors and an industry in need of reporting assistance. A reduction in reporting burden of 40% is expected for these three industries, resulting in a 10% reduction in burden for the TRI program as a whole. When the software is available to all industries a reduction in reporting burden of 20% is expected. Since this software will become available during the next three years, but was not considered in developing the burden estimates contained in this ICR, EPA will ask OMB to adjust the total burden approved once the software is in use.

4(d) Collection Schedule

Facilities must report their information on a calendar year bases, and submit the Form R to EPA by July 1 each year. On average, EPA has released the national TRI data set to the public approximately ten months after the annual reporting deadline, i.e. July 1. In response to public concerns about shortening the time frame for release of TRI information, EPA is instituting tighter deadlines for facilities to submit revised reports, and combining a series of automated data quality operations. The agency expects these measures will help it to meet the ultimate goal of releasing data in the year of submission. Also, it is important to note that EPA's national database is just one avenue of access to the TRI information. Each state also makes its data available to the public, and most states are able to make their data available prior to EPA's release of the national database. For example, nearly half of the states release their state's TRI database within four months of the reporting deadline.

5 NONDUPLICATION, CONSULTATIONS, AND OTHER COLLECTION CRITERIA

5(a) Nonduplication

The basic information requested on the Form R is required to be reported by law. Other statutes, however, also require the reporting of information about releases of chemicals to the environment, creating the possibility of overlap or duplication of reporting requirements. EPA anticipates some overlap and provides that respondents may use readily available data collected pursuant to other provisions of law to complete the section 313 reports. However, currently available non-TRI sources of information cannot provide readily accessible release and transfer, inventory, or pollution prevention data with the scope, level of detail, and chemical coverage as data currently included in TRI.

The TRI contains information on releases, transfers, inventories, and pollution prevention activities for approximately 650 toxic chemicals and chemical categories. Although there are no national databases that are comparable to the whole of TRI, several data sources exist which contain media-specific data on releases and transfers. In theory, information from these databases could be combined to form an analog of release and transfer data contained in TRI. However, this undertaking is extremely difficult at best, and may be impossible given the currently available data sources (see Figure 1 below). Difficulties replicating TRI data using these alternative sources include differences in chemical coverage, facility coverage, reporting frequencies, and perhaps most importantly, the integration of data from various sources at a facility level.

For example, the AIRS Facility Subsystem (AFS) contains emissions, compliance, and enforcement data on air pollution point sources emitting any of the so-called criteria pollutants at levels above defined thresholds. AFS data are not a good substitute for TRI air emissions data because of the lack of reporting requirements for most air toxics and the lack of rigid reporting schedules, and because there is no requirement for states to report emissions of Hazardous Air Pollutants (HAPs) to AFS. A number of states and regional agencies do maintain their own air emissions inventories, including California, and the Great Lakes states. In these states, difficulties replicating TRI data include variations in the types of data collected, and the fact that only some states maintain these types of inventories.

FIGURE 1 - MAJOR RELEASE AND TRANSFER DATABASES

Data source	Media and chemical coverage[1]	Relevant releases statistics available	Ease of database substitution for TRI data[2]
Aerometric Information Retrieval System (AIRS), Facility Subsystem (AFS)	Contains annual emissions of six criteria air pollutants for facilities above reporting thresholds. Also contains limited information on toxics.	Total annual releases; average daily releases in non-attainment areas.	Limited toxics data due to submission being voluntary.
Permit Compliance System (PCS)	Contains monthly discharge monitoring data and flow rates for major sources of water pollutants.	Contains concentration data; total annual releases can be calculated; average daily releases, maximum "moment" if continuous monitoring.	Only includes chemicals for which a discharge limit has been set. Difficult to link between PCS parameters and CAS #; very limited monitoring data for minor dischargers.
Biennial Reporting System (BRS)	Contains waste volumes by RCRA waste code reported biennially.	Total annual off-site transfers of hazardous waste for land disposal; total annual releases to POTW.	Many RCRA waste codes are not specific to an individual CAS #. Quantities of chemicals in waste can not be determined. Portion of waste stream matching each waste code can not be determined.

Under RCRA, generators, treaters, storers, and disposers of hazardous waste are required to submit reports to the Biennial Reporting System (BRS) every two years. BRS tracks trends in hazardous waste generation and management, and contains information on the quantity and nature of hazardous waste treated and disposed. BRS cannot duplicate the information contained within TRI, as BRS waste codes do not necessarily map to unique chemicals, quantities of specific wastes in the wastestream cannot be determined, and reporting is less frequent than that of TRI. Of the 258 TRI chemicals with reported releases to land, underground injection, or off-site transfers in 1994, only 158 (61%) can be tracked by BRS.

1. For additional detailed information on chemical coverage of TRI, AFS, BRS, and PCS, please refer to Attachments B-1 and B-2 at the end of this document.

2. "Ease of substitution" refers only to the potential of the information in the database to substitute for TRI reporting. It does not imply that the database is not adequate for the purposes for which it was designed.

The Permit Compliance System (PCS) tracks permit compliance and enforcement status of facilities that discharge to surface waters. PCS data are not a suitable substitute for TRI data due to the fact that PCS is a permit tracking system and not a loadings system. In other words, PCS typically tracks pollutant concentrations, and not total releases. This difference in purpose results in differences which are difficult to resolve in the amount and types of data collected. Furthermore, PCS does not contain all TRI chemicals.

TRI also contains inventory data, which makes up a small portion of the total data. The most likely alternatives for TRI inventory data are the Tier I/II data reported under EPCRA §312. Under EPCRA §312, regulated facilities must submit annual inventory reports of hazardous chemicals stored on site to the state. Tier I requires reporting on broad categories of physical hazards, while Tier II requires chemical specific information by CAS number. The information contained on the Tier I and Tier II reports surpasses the chemical inventory data requested on TRI Form R in terms of the chemicals covered and level of detail. However, there are significant difficulties with respect to public access of Tier I and Tier II data, including the lack of a national integrated database.

In addition to release/transfer and inventory data, TRI also collects pollution prevention data from reporting facilities. Pollution prevention data somewhat analogous to data in TRI can be found in BRS (described briefly above) and databases administered by two state environmental agencies. While BRS provides both qualitative and quantitative pollution prevention information, it does not have the facility or chemical coverage necessary to replace TRI pollution prevention reporting requirements. BRS contains data on generation, transfer, and management of hazardous wastes, while pollution prevention data contained in TRI includes information on wastes or process by-products in all production phases and media. In addition, states have come to rely on the pollution prevention data provided to them by TRI. As a result, no state program collects all of the pollution prevention data currently available in TRI.

What follows is a more detailed discussion of the several information sources that currently provide pollutant release and transfer data. The analysis is broken down by specific type of data collected under TRI.

Fugitive/Non-Point Air Emissions and Stack/Point Air Emissions

Fugitive (non-point) air emissions and stack (point) air emissions are reported under Sections 5.1 and 5.2, respectively, of TRI Reporting Form R. (Fugitive air emissions are defined as all releases of air pollutants to the air that are not released through stacks, vents, ducts, pipes, or any other confined air stream. Stack air emissions are defined as all releases of air pollutants that are released through stacks, vents, ducts, pipes, or any other confined air stream.) In the paragraphs below, several alternative data sources are compared and contrasted to TRI. Key criteria considered in comparing

the alternative data sources with TRI include: chemical coverage, industry/facility coverage, release statistics, and public accessibility to the data.

AIRS Facility Subsystem (AFS)

The Aerometric Information Retrieval System (AIRS) is a computer-based repository of information on airborne pollution in the United States and various World Health Organization (WHO) member countries. AIRS is comprised of four major databases - Air Quality (AQ), AIRS Facility Subsystem (AFS), Area/Mobile Source (AMS), Geo-Common (GCS) subsystems, and a mapping utility for all AIRS data called AIRS Graphics (AG). Each subsystem addresses different, but connected, aspects of the Clean Air Act regulatory requirements. AIRS is administered by EPA's Office of Air and Radiation (OAR).

The AIRS Facility Subsystem (AFS) is the database component of AIRS which tracks air emissions from industrial plants. AFS contains emissions, compliance, and enforcement data on air pollution point sources regulated by EPA, state and local environmental regulatory agencies.

OAR manages EPA programs to improve air quality in areas where the current quality is unacceptable and to prevent deterioration in areas where the air is relatively free of contamination. To help accomplish this task, OAR uses AFS to track emissions of pollutants that have been proven to be detrimental to public health, known as *criteria pollutants*, as defined in the national ambient air quality standards. The six criteria pollutants which states must report to AFS include: particulate matter less than 10 microns in size (PM10), carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), lead (Pb), and ozone (reported as reactive volatile organic compounds, an ozone precursor). States are required to report ambient air quality data on a quarterly basis, and point source data on a yearly basis, for the criteria pollutants listed. In addition, states may choose to use the AIRS system to store data on a wide variety of other pollutants and related variables.

Data in AFS is organized into four logical levels: plant, stack, point, and segment. The plant is a facility represented by its physical location, and defined by property boundaries. A stack or vent is where emissions are introduced into the atmosphere. An emission point is a physical piece of equipment or a process that produced emissions. Finally, a segment is a component of a point process (such as fuel combustion) that is used in the computation of emissions. (U.S. EPA, 1995a)

At the facility level, sources with air emissions greater than 1,000 tons per year (tpy) for CO, 100 tpy for VOC, PM-10, SO_x, or NO_x, or 5 tpy for lead must report actual or estimated annual emissions data. At the point level, such as a stack or any single piece of equipment or process where emissions occur, sources with air emissions greater than 25 tpy for VOC, PM-10, SO_x, or NO_x, 250 tpy for CO, and 5 tpy for lead must report actual or estimated annual emissions data. AFS data are

utilized by states to prepare State Implementation Plans to comply with regulatory programs and by EPA as an input for the estimation of total national emissions. Data for over 100,000 point source facilities are stored in AFS.

Compliance and enforcement data are updated by states and EPA based on the data submitted by facilities. Compliance data for these plants may be recorded for the plant as a whole or for a specific point within the plant. Emissions estimates are available for facilities satisfying the emissions thresholds described above. States also are required to report emissions data for point sources which emit below the 100 ton threshold in areas where air quality does not meet federal standards (non-attainment areas).

Fugitive air emissions data are not specifically flagged within AFS. It may be possible, however, to generate fugitive emissions estimates for pollutants included within AFS by determining all Source Classification Codes (SCCs) generating fugitive air emissions, and then totaling emissions (Kleeman, 1995). SCCs are eight-character codes which represent specific processes or functions within a source category. For example, SCC 1-02-005-01 corresponds to the burning of distillate oil in an industrial boiler. SCCs allow proper identification of processes as well as proper calculation of emissions when applying AP-42 emission factors.[3] Because SCC codes are not designed to distinguish stack level emissions from fugitive air emissions, such an effort would require a review of all coded industrial processes in order to identify those generating fugitive emissions.

As described in more detail in following sections, AFS data are not good substitutes for TRI stack or fugitive emissions data. Problems include the lack of reporting requirements for most air toxics, and the lack of rigid reporting schedules.

Chemical coverage: States are required to report to EPA annual emissions estimates for point sources emitting greater than or equal to threshold quantities of the *criteria pollutants* (40 CFR §51: 321-326): PM10, carbon monoxide, sulfur dioxide, nitrogen dioxide, lead, and ozone. Currently, there is no requirement for states to report hazardous air pollutants (HAPs) to AFS, although some states with toxics reporting requirements that exceed federal requirements may upload their air toxics

3. AP-42 Emission Factors, available from the Factor Information Retrieval (FIRE) System, and emission factors in general, are representative values that attempt to relate the quantity of a pollutant released with a given activity associated with the release of that pollutant. Emission factors are typically expressed as the weight of pollutant divided by a unit weight, volume, distance, or duration of the activity emitting the pollutant (EPA, 1995b). Generally, AP-42 emission factors are simply averages of available emissions rates that can be used to facilitate the estimation of air emissions and are sometimes used by facilities to estimate TRI releases and transfers. A difficulty with using emissions factors is that there is a lack of facility-specific throughput data (production or activity), without which estimates cannot be made. Another difficulty is that the factors are averages and do not account for the variations between facilities.

information to AFS.[4] At this time, however, no research has been undertaken to determine which states report which HAPs. There also are no statistics on the frequency of state HAP reporting, which facilities report, or the reporting thresholds.

Because data on toxic releases in AFS are sparse, emissions can be estimated (that is, modeled) using a technique called "speciation." Speciation involves multiplying reported emissions of particulate matter (PM) and VOCs by fractions representing various compounds, according to a profile specific to the emission source. OAQPS's Clearinghouse for Inventories on Emission Factors (CHIEF) electronic bulletin board stores a PC-based speciation application called SPECIATE, with apportionment factors for 691 organic chemicals and 110 particulates in about 700 total profiles. However, there are significant limitations to the accuracy and reliability of speciation data. The speciation profiles contained in SPECIATE were developed from field sampling, engineering judgements, and other indirect techniques. The weight percentages and number of chemicals in a given profile may be heavily influenced by the particular analytical and sampling methods used to develop the profile. A bulletin posted to EPA's CHIEF bulletin board reads that "[SPECIATE] profiles were not developed for, and are not recommended for use in developing toxics inventories by speciating VOC or PM emission estimates." (U.S. EPA, 1996)

Another shortcoming of SPECIATE involves the assignment of profiles for all SCCs in AIRS. Ideally, each SCC in AIRS would have a unique profile to represent its speciation characteristics; however, there are far more SCCs than available profiles. Therefore, those categories which are not associated with original profiles are assigned profiles based on engineering judgement (Radian, 1993).

Industry/facility coverage: Because facilities are included in AFS on the basis of their emissions levels, there are no SIC or industry limitations imposed on the list of AFS-covered facilities. In contrast, TRI currently only requests data from some, but not all SIC codes, thereby excluding many other industries. It is important to note, however, that emissions thresholds play an important role in determining which facilities are covered. Facilities are covered under AFS only if they release multiple tons of criteria pollutants annually. Smaller HAP emitters that release small amounts of criteria pollutants may therefore be completely exempted from reporting to AFS. TRI, on the other hand, employs thresholds of 10,000 and 25,000 pounds per year, depending on how a particular chemical is used, processed, or manufactured. In addition to this use threshold, TRI also exempts facilities with less than the equivalent of ten full time employees.

Release statistics/reporting frequency: EPA requests that states upload information to AFS on an annual basis. However, because there are no defined reporting schedules and no real penalties

4. Hazardous Air Pollutants (HAPs) are defined in Section 112 of the Clean Air Act (CAA). Section 112 lists 189 HAPs, of which 181 also are listed in TRI.

for not reporting, in practice there is "rolling receipt" of information, with some states failing to report for various reasons in some years. Although AFS notes that most states report regularly, and some facility-specific emissions data are available from AFS across all reporting years (Wakefield, 1995), the looseness of the reporting structure makes comparisons across states, industry, facilities, or years difficult.

Accessibility: AFS data are accessible through the EPA Mainframe and to a limited degree, through AIRS Executive, a self-contained updatable and downloadable program which digests and summarizes AIRS data. There are no access restrictions for AIRS Executive which is available through the EPA World Wide Web site (http://www.epa.gov/airs/aexec.html). The EPA Mainframe, however, is password protected and is not accessible by the general public.

State Air Emissions Inventories

Several states and regional agencies maintain their own air emissions inventories, including the inventory set up under California's "Hot Spots" Information and Assessment Act (Assembly Bill 2588), and the Great Lakes Regional Air Toxics Emissions Inventory. Approximately half the states have implemented some kind of air toxics reporting system (Pope, 1995). However, the amount of data as well as the types of data elements collected varies widely from state to state. The Great Lakes inventory merits special attention because other states and countries (including Louisiana; Texas; Ontario, Canada; and Mexico) use it as a model for their own inventories. A number of other states have active programs or are in the process of developing them. A number of other states have active programs or are in the process of developing them. Two are discussed below in terms of their coverage and accessibility characteristics.

Chemical coverage: Chemicals covered under state and regional inventories vary widely in the number of chemicals covered, data elements required, and reporting thresholds used. While some inventories collect detailed, facility level information on many chemicals, others are designed only to track very specific pollutants for specific applications. For example:

A. California's Air Toxics "Hot Spots" Act (AB 2588) mandates emissions reporting for over 700 substances which pose chronic or acute health threats when present in the air. Of the 700, 354 also are listed under TRI. Facilities are subject to the requirements of AB 2588 if they manufacture, formulate, use, or release any of the listed substances in quantities above 10 tons annually. Other applicability criteria, such as being listed on any California Air District toxics survey, inventory or report, capture additional facilities. Facilities are required to prepare detailed air toxics emissions inventory plans and emission inventory reports, which must be updated every four years (CARB, undated).

A. When implemented, the Great Lakes Regional Air Toxics Emissions Inventory will track point and area source emissions for 82 toxic chemicals that have been identified as "significant contributors to the contamination of the Great Lakes." Of these chemicals, 59 also are contained in the TRI database. Designed to track emissions for the region, the Inventory will rely on emissions factors for its data, and will not require emissions reporting by facilities.

Industry/facility coverage: States often develop their own toxics inventories due to perceived gaps in TRI's industry coverage. For example:

A. The Great Lakes Regional Air Toxics Emissions Inventory will not require emissions reporting by industry. Rather, state agencies will use best available emission factors (FIRE) or source-specific emission factors and throughput information to estimate emissions from a much larger catalog of sources than TRI, including area sources such as dry cleaners, asphalt plants, and wood stoves (Ratza, 1995).

Release statistics/reporting frequency: The type of data collected and data collection frequency among states and regions also varies widely. For example:

A. Every four years, California collects detailed release inventories of over 700 state identified HAPs from all facilities which meet the "Hot Spots" Act applicability requirements (CARB, undated).

- The Great Lakes inventory, on the other hand, does not collect emissions information from industry, but instead produces estimates for point sources using emissions factors and throughput data (GLIN, 1996).

Accessibility: Because each state or region which maintains a HAPs database does so more or less independently of the federal government, there currently is no central repository of this information. Because the states and regions also use different database formats and applications to maintain their data, building a multi-state/region air emissions inventory from the existing databases would be a challenging task. However, OAQPS is in the process of developing a national toxics inventory database, which will utilize a combination of TRI data and state, regional, & local databases (Pope, 1995).

Another potential partial solution to the data compatibility problem, once it is fully implemented, is the Great Lakes Regional Air Toxics Emissions Inventory, which will be maintained using the Regional Air Pollutant Inventory Development System (RAPIDS). According to the Great Lakes Commission, RAPIDS is the "first-ever multi-state pollutant emissions estimation software," and handles sophisticated relational data management as well as emissions estimations.

Currently, the Great Lakes Commission is coordinating Phase Three of the development of the Great Lakes Regional Air Toxics Emission Inventory, which involves the compilation of full statewide inventories for the eight-state Great Lakes region. According to the Great Lakes Commission, they have developed the *Air Toxics Emissions Inventory Protocol for the Great Lakes States*, which will guide "each state's efforts to identify key sources and estimate yearly emissions for the target toxic air pollutants by ensuring consistency across the region." (GLIN, 1996) In addition to the Great Lakes states, there are several other states that are considering using the RAPIDS database as a model for their own. Their adoption of the RAPIDS standard could lead to enhanced data compatibility among these states.

Various states and regions employ different methods to make their information available. For example, under the "Hot Spots" program, the California Air Resources Board is required to make the collected emissions data available to the public through health risk assessments, facility ranking, and annual reports. RAPIDS will take full advantage of the Internet, and will be a versatile data management system, allowing states to build on it and tailor it to their own needs. There are plans to make Great Lakes Inventory data and reports available on the World Wide Web.

Title V Part 70 Operating Permits

Under the 1990 Clean Air Act Amendments (CAAA), facilities designated as "major sources" and facilities otherwise subject to Section 112 and Title IV must apply for a Title V Part 70 Operating Permit. Although a facility can meet the criteria for a major source in any of several ways, particularly relevant are those facilities which attain major source status by emitting 10 tons per year (tpy) or more of any HAP or 25 tpy total combined HAPs. As part of the application for a Title V permit, some facilities may have to report emissions of air toxics (see discussion on chemical coverage below). There is significant overlap between the 189 HAPs regulated under the CAA and the 600+ chemicals in TRI. Compared to TRI, however, the information provided in the permit applications has very different characteristics in terms of chemical coverage, completeness, and accessibility.

Chemical coverage: Title V requires that all permit applicants provide qualitative descriptions of their emissions, including all criteria pollutants and all 189 toxic pollutants. Quantitative emissions estimates are usually required by the permitting authorities only when more information is needed to resolve a dispute over applicable requirements, such as whether or not the facility should be classified as a major source. In the event that there is no dispute, no emissions estimates are required. In situations where estimates are required, facilities are allowed to use "available information," which includes EPA emission factors documents, "reasonable engineering projections," as well as test data. EPA's policy, as outlined in the "White Paper for Streamlined Development of Part 70 Permit Applications," is to request just enough information to convince the permitting authorities that the facility meets all emissions requirements. According to the White Paper, "emissions information for these

purposes does not always need to be detailed or precise." (U.S. EPA, 1995c) For most pollutants, it is not likely that Title V Part 70 emissions data could substitute for TRI release reporting.

Industry/facility coverage: There are no SIC or industry limitations for major facilities. For non-major sources, decisions on permit applicability are made on a source category by source category basis. Decisions are currently being made on Title V Part 70 permit requirements for non-major sources as to which source categories will be exempted, deferred, or required to obtain permits (Seitz, 1995). However, as stated above in the chemical coverage discussion, actual emissions estimates are required only when attempting to settle a dispute over facility status or other applicable requirements. Therefore, the majority of Title V permit applicants are not required to furnish any quantitative data. Title V's facility coverage is likely to be different from TRI's facility coverage, due to the differences in applicability criteria between the two systems. While TRI has a manufacture, process, or use threshold for toxic chemicals, Title V has applicability criteria based on HAPs emissions (see above).

Release statistics/reporting frequency: Emissions information is required at the time of permit application, renewal, and modification. Since permits are typically renewed every five years, most facilities will report their information every five years (Swanson, 1995). Other possible situations for emissions information updates include new applicable requirements not requiring permit modifications, and changed compliance status of facilities. Even if the information was as complete as TRI, the duration between reports is much longer than the one year timespan between TRI reports.

Accessibility: The U.S. EPA does not maintain a central inventory of the emissions data contained in the permit applications (Southerland, 1995). This information is kept at the state and regional levels, making it difficult to access, especially in comparison to TRI.

Summary of Availability of Fugitive/Non-Point and Stack/Point Air Emissions Data

None of the data sources described above can be used in place of TRI fugitive or stack emissions data. Although AFS provides good data on criteria pollutants, only one criteria pollutant (lead) is reportable as a discrete chemical substance on both AFS and TRI. Further, AFS HAP release information is not a good substitute for TRI because data for EPCRA Section 313 toxic chemicals are generally unavailable, and speciation cannot reliably generate accurate facility-specific HAP emissions estimates. In addition, fugitive emissions are not specifically flagged within AFS. Some state air emissions inventories such as California's may collect air emissions information that is as complete or even more detailed than TRI. However, not all states maintain inventories, and there are still many unresolved data compatibility and accessibility issues. The Great Lakes inventory is limited in its geographic coverage as well as the number of chemicals it contains, uses different data collection techniques than TRI, and relies on state-generated estimates in lieu of facility reported release data.

Emissions information on air toxics contained within Title V Permit documents also are not a substitute for TRI emissions in terms of chemical coverage, frequency of reporting, or accessibility.

Direct Discharges to Receiving Streams or Water Bodies

Form R requires that facilities report total direct discharges to receiving streams or water bodies. Releases are reported in pounds per year and include the name of the receiving stream or water body. The following section compares and contrasts the Permit Compliance System (PCS) with TRI to determine whether it could be used as a substitute for TRI chemical release data. In comparing and contrasting PCS with TRI, several variables are considered. Key criteria include: chemical coverage, industry and facility coverage, release statistics, reporting frequency, and accessibility.

The Permit Compliance System (PCS) tracks permit compliance and enforcement status of facilities regulated by the National Pollutant Discharge Elimination System (NPDES) under the Clean Water Act (CWA) and is managed by EPA's Office of Enforcement and Compliance Assurance (OECA). PCS tracks all point source discharges to surface waters, but does not include indirect releases such as discharges to Publicly Owned Treatment Works (POTWs). Permits are classified as major or minor based on facility discharge characteristics such as toxic pollutant potential and flow volume. Facilities are classified as "major" based upon a scoring system which considers toxic pollutant potential, flow/streamflow volume, conventional pollutant loading, public health impacts, water quality factors, and proximity to near coastal waters.

Major dischargers report compliance with their NPDES permit limits through Discharge Monitoring Reports (DMRs). DMRs are generally submitted on a monthly basis to state and regional EPA, providing detailed information on reported measurement values for those chemicals regulated within their NPDES permit. Data collected via DMRs are entered into PCS, including: concentration and quantity values for regulated pollutants, and the type of permit violation (if any). EPA uses PCS to produce the Quarterly Non-Compliance Report (QNCR), a public document listing NPDES permit violations. EPA requires monitoring data only for those permits classified as major. For minor facilities the database contains only general facility-level information. It is important to note, however, that All NPDES permittees (both major and minor) are required to file DMRs with their State or Regional NPDES authorities. Therefore, monitoring data for minor facilities are available from the files of these permitting authorities, which are open to the public. Data for minor facilities are not maintained through the national database.

There are several differences between TRI and PCS stemming primarily from the divergent purposes of the two systems. Unlike TRI, PCS is a permit tracking system rather than a toxic pollutant loadings system. The differing data needs of these two types of systems make it problematic to transfer information from one to the other. For example, although EPA requires the reporting of PCS data in

mass units unless it is impracticable to do so, the fact that PCS monitoring data can be reported in either mass units or as concentrations can make comparing the releases of two facilities a complicated issue. Data in units of concentration data can be converted to mass units only if flow data also exist.

Chemical coverage: A facility's permit record may not include all pollutants actually being discharged by the facility. The monitoring data available through PCS for major dischargers include only those chemicals for which a monitoring requirement has been set in the permit. Federal effluent guidelines exist for many major industries and determine chemicals for which monitoring is required. However, the guidelines may not consider the same chemicals across industries. Therefore, two facilities in different industries with similar chemical releases may not necessarily both report the same set of chemicals to PCS. Also, for facilities not covered by a Federal effluent guideline, it is left to the discretion of the permit writers to decide which pollutants will be included in the permit, how often monitoring must occur, and which parameters and units of measure are to be used.

Because NPDES permit discharge limits are written in terms of PCS pollutant parameters, and not CAS numbers, much of the data contained within PCS is not chemical-specific. An example of a non chemical-specific PCS parameter is parameter 00535, Suspended Volatile Solids. It may be difficult to determine the mix of specific chemicals when data are reported using non chemical-specific parameters. In addition, in many cases, multiple parameters are reported for the same chemical, representing different measures of the same chemical. For example, PCS parameter numbers 01049, 01050, and 01051 represent dissolved, suspended, and total lead, respectively. Because there may be several parameters for a single chemical, it becomes difficult to aggregate their masses. Chemical Abstract Service (CAS) registry numbers are not reported for chemical parameters; however, parameters can sometimes be linked to a specific CAS number using an EPA database called SUPERCAS. SUPERCAS is an edited and augmented version of the CAS matching file contained in STORET, an EPA water monitoring data system. All PCS parameters are contained within SUPERCAS, and although SUPERCAS is not updated regularly, the addition of new parameters to PCS is a relatively infrequent event.

Industry/facility coverage: EPA requires monitoring data only from those facilities classified as major dischargers. For minor facilities, the database contains only general facility-level information. While the database tracks about 65,000 active permits, only about ten percent of these are classified as major. A state may choose to submit monitoring data for minor facilities but generally such data are unavailable. Unlike TRI, PCS does not restrict reporting requirements to specific industry groups or exempt facilities with less than the equivalent of ten employees.

Release statistics: The release statistics reported for PCS parameters depend on the permit specifications. Often, releases are reported as concentrations in parts per million (ppm) or milligrams per liter (mg/L), as opposed to units of mass such as pounds per year (lb/yr) or kilograms per year

(kg/yr) (Rubin, 1995). If discharges are reported in mass units, a maximum daily discharge also is reported. The basis for these reported data varies among facilities. For example, a facility may sample its effluent only once per month and still report a monthly maximum discharge. If discharges are reported as concentrations, a minimum, maximum, and average value may be reported, although a significant percentage of dischargers report only a maximum concentration (Rubin, 1995). In general, flow rates are available for converting concentration units to units of mass (i.e., kg/year can be calculated by multiplying mg/L by the annual flow rate), although in some cases the flow rates are not provided.

A complex algorithm is required to estimate annual loadings from PCS data. The algorithm must first identify facilities reporting quantities in pounds or kilograms, favoring mean values over maximum or minimum values. For facilities with no loadings data, monthly concentration data must be linked and multiplied by each month's corresponding flow data, again favoring mean values over maximum and minimum values. Additionally, the algorithm must convert the results to a single unit of measure. PCS facilities report at least 26 different units of measure and 15 units of flow (e.g., gallons, thousands of gallons, and millions of gallons in terms of minutes, hours, days, and years). This step is repeated for each month and summed to produce an annual loadings estimate. If twelve months of data are not available, an average value can be used to produce an annual estimate.

Facility releases may be overestimated for several reasons: 1) facilities that release chemicals below their detection limit (e.g., between 0-6 ppm) will sometimes report releases at the detection limit (e.g., 6 ppm) in order to indicate the likely presence of a chemical; 2) facilities with episodic releases may be required to report releases at their peak level and not an average annual quantity; and 3) Facilities might have multiple monitoring points along the same outfall route, resulting in double counting. Such reporting specifications may be appropriate given the purpose of the NPDES permit; however, PCS data will not always be appropriate for estimating annual pollutant loadings.

Reporting frequency: Discharge Monitoring Reports are generally submitted monthly to State or Regional EPA; therefore, reporting frequency is not a limitation when compared to TRI.

Accessibility: PCS data are accessible through the EPA Mainframe, the ENVIROFACTS database, as well as RTK NET. The EPA Mainframe is not accessible to the general public.

Conclusion of Availability of Data on Direct Discharges to Water

Because PCS is a permit tracking system, and not a pollutant loadings system, it cannot provide a suitable substitute for TRI release data. Within PCS, release data are only available for major facilities, and are reported in terms of PCS parameters, not specific chemicals. These chemical parameters cannot always be easily converted into CAS numbers. In addition, only those chemical

parameters actually specified in the facility permit have monitoring requirements. In some cases, data may be reported in units of concentration rather than units of mass. If flow rates also are reported, concentration data can be used to estimate total releases, although there are several complicating factors in producing such an estimate. As of this writing, the Office of Water and the Office of Enforcement and Compliance Assurance are undertaking a major effort to improve the process through which permits are written and coded into PCS so that loadings can be tracked more accurately and efficiently.

Underground Injection and Land Disposal On-Site

Section 313 requires reporting of on-site surface and subsurface (i.e., underground injection) releases to land. On-site surface releases to land include the following subcategories: landfill, land treatment/application farming, surface impoundment, and other disposal. The Biennial Reporting System (BRS) requires reporting of both underground injection and other on-site releases to land. The following analysis compares and contrasts BRS with TRI to determine whether it can be used as a substitute for TRI underground injection and on-site releases to land data.

Under Section 3002(a)(6) of the Resource Conservation and Recovery Act, facilities that generate an amount of hazardous waste that exceeds a defined threshold are required to submit biennial reports on that waste to EPA (or to state agencies that run RCRA programs). These reports include information on the quantity and nature of hazardous waste, the disposition of all hazardous waste, efforts undertaken to reduce volume and toxicity of waste generated, and the changes in volume and toxicity of waste actually achieved during the year. Facilities which treat, store, or dispose of hazardous wastes must provide information on the methods of treatment, storage or disposal. Data are reported to the states and regions, which then provide it to EPA headquarters. Information is entered into BRS, which is maintained by the Office of Solid Waste and Emergency Response (OSWER).

BRS provides an overview of the progress of the RCRA program through tracking trends in hazardous waste generation and management. Large quantity generators (LQGs) and treatment, storage, and disposal facilities (TSDFs) are required to report every two years. Large quantity generators are defined as facilities that generate 2,200 pounds of total RCRA hazardous waste per month; generate 2.2 pounds of RCRA acute hazardous waste a month, or accumulate this amount during the year; or generate or accumulate more than 220 pounds annually of spill cleanup material contaminated with RCRA acute hazardous waste. BRS contains data for about 23,000 LQGs and 4,000 TSDFs.

There are several important differences between BRS and TRI. Although BRS maintains a large amount of useful data, it nevertheless cannot duplicate the information contained within TRI. Waste codes used in BRS do not necessarily map to unique chemicals, quantities of specific chemicals

in a wastestream cannot be determined, and reporting is less frequent than for TRI. As detailed below, for these reasons BRS is not a reasonable substitute for TRI.

Chemical coverage: BRS contains data on hazardous wastes as defined by RCRA. RCRA hazardous waste is designated as either "listed waste" or "characteristic waste". Listed wastes have been identified as hazardous as a result of EPA investigations of particular industries or because EPA has specifically recognized a commercial chemical waste's toxicity. Listed wastes appear in 40 CFR Part 261. Characteristic wastes are determined hazardous because they exhibit one or more of the following "characteristics": ignitability, corrosivity, reactivity, or toxicity.

The primary difficulty with waste codes is that not all waste codes used in BRS reporting map directly to a single, unique chemical. For example, waste code F004 is defined as:

> *The following spent non-halogenated solvents: cresols, cresylic acid, and nitrobenzene; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.*

Listed wastes that are categorized as non-specific source waste (the F wastes, such as F004 defined above), specific source wastes (the K wastes), and three of the characteristic waste categories (D001, D002, and D003) cannot be matched to a specific chemical. Listed wastes categorized as commercial chemical products (the P and U wastes), and characteristic wastes meeting the toxicity characteristic (D004-D043) each may represent a single, unique chemical, but they also may represent a mixture of various materials of which the identified chemical is but a small proportion. Using the assumption that these P, U, and D004-D-43 wastes do represent a single, unique chemical, then a total of 158 of the 258 TRI chemicals with reported releases to land, underground injection, or off-site transfer in 1994 can be mapped directly to RCRA waste codes. Out of the total 627 chemicals on the current TRI chemical list, 185 can be mapped to RCRA waste codes.

There were 306 million tons of hazardous waste generation reported to BRS in 1991. Figure 2 summarizes the breakdown of BRS reported wastes for 1991. Shaded rows highlight waste categories that represent a single unique chemical (waste codes D004-D043, P, and U), representing only 51.6 percent of the volume of waste generation reported in 1991, although not all of these chemicals are in TRI.

FIGURE 2 - Hazardous Waste Generation Reported to BRS for 1991

Type	Description	Tons (millions)	% of Total
Characteristic Waste	D001, D002 or D003, only	37.7	12.3%
	D004 - D043, only	157.3	51.4%
	Multiple characteristic wastes	25.2	8.2%
Listed Waste	F waste or K waste, only	21.3	7.0%
	P waste, only	0.03	0.01%
	U waste, only	0.5	0.2%
	Multiple listed wastes	3.3	1.0%
Both Characteristic and Listed waste		59.4	19.4%
Unknown		1.0	0.4%
Total		305.7	100%

Source: U.S. EPA, 1994.

Industry/facility coverage: BRS reporting requirements do not require that specific industries or SIC codes report; however, certain waste categories are excluded (40 CFR §§261.4 and 261.3(c)(2)(ii)). For example, the so-called the Bevill exemption (40 CFR §261.4(b)(7)) classifies solid wastes resulting from the extraction, beneficiation, and processing of ores and minerals (including coal, phosphate rock and overburden from the mining of uranium ore) as non-hazardous solid wastes and therefore not subject to BRS reporting.[5] Extraction and beneficiation wastes, plus 20 special mineral processing wastes (listed under 40 CFR §261.4(b)(7)), fall under RCRA Subtitle D classification. TRI does not currently require reporting from the mining industry, although mining is one of the industries being considered for addition to TRI. In addition, emission control wastes, which are prominent wastes within the electric utilities industry, are excluded from BRS reporting. Electric utilities represent an industrial group being considered for addition to TRI. The full list of wastes that are excluded from BRS reporting include the following:

Acid
Agriculture, Irrigation
Cement Kiln Dust
Chromium, Leather Tanning
Drilling Fluid
Emission Control Waste
Fertilizer
Household
Mining
Mining, In situ
Mining, Overburden
Nuclear
Petroleum-contaminated Media and Debris
Precipitation Runoff
Pulping Liquor
Sewage, Domestic

5. As defined under §261.4(b)(7), the beneficiation of ores and minerals includes but is not limited to activities such as the following: crushing, grinding, washing, sizing, drying, solvent extraction, and magnetic separation. For a complete list refer to §261.4(b)(7).

Sewage, Mixture
Wastewater, Point Source Discharge
Wood, Wood Products

Release statistics: While some of the waste codes used in BRS to identify waste streams may refer to a single, unique chemical (i.e., a specific CAS number), others do not. In addition, a waste stream can be identified by multiple waste codes (e.g., a waste stream can simultaneously be ignitable, contain spent halogenated solvents, contain benzene, etc.). At present, there is no mechanism to apportion the waste stream volume to particular waste codes where multiple codes are reported.

The "mixture rule" and "derived-from" rule were adopted by EPA in 1980 and affect the data reported to BRS.[6] The derived-from rule provides that wastes derived from a listed hazardous waste (such as the ash from incineration of a listed waste) also are deemed hazardous waste. The mixture rule provides generally that any mixture of listed hazardous and non-hazardous waste are considered hazardous waste (although there are important exceptions). RCRA waste streams are often a mixture of one or more toxic chemicals contained at various concentrations in a non-hazardous matrix (e.g., railroad gravel or water). From the reported data, it is not possible to determine the fraction of the entire waste stream that is composed of a particular hazardous chemical. While it is evident that the chemical concentration is adequate to result in the waste stream being defined as hazardous (e.g., the chemical concentration exceeds a certain threshold), no more detailed determination regarding the quantity of the hazardous component released can be drawn.

Reporting frequency: LQGs and TSDFs submit BRS data on a biennial basis. In contrast, TRI reporting occurs on an annual basis.

Accessibility: BRS is accessible through the EPA Mainframe, the ENVIROFACTS database, as well as RTK NET (See Attachment B-3). The EPA Mainframe is not accessible to the general public.

Conclusion on Availability of Data on On-Site Releases to Land

BRS requires individual reporting of underground injections on-site as well as on-site releases to land, as does TRI. However, only half of the waste codes used in BRS can be assumed to identify individual chemicals. In addition, the waste classification system, including the "mixture rule" and "derived-from" rules, results in waste quantities being reported to BRS that do not identify quantities of the individual chemicals. The quantity reported to BRS represents the quantity of the entire waste

[6] The "mixture rule" and the "derived-from" rule were struck down by a 1991 D.C. Circuit Court ruling, but at the court's suggestion, EPA has temporarily reenacted the rules on an interim basis while it develops a new rule to consider them.

stream, and not individual chemicals. Therefore, BRS is not a good substitute for TRI because it is not possible to reliably estimate the releases of a particular toxic chemical to underground injection on-site or releases to land on-site from BRS.

Discharges to a POTW

Section 313 requires that facilities report information on annual discharges to POTWs (Public Owned Treatment Works), including the name and location of the POTW. Although BRS requires some reporting of discharges to POTWs, and PCS allows for reporting of indirect discharges to water, neither system provides information about POTW discharges at TRI's level of detail and completeness.

The Biennial Reporting System (BRS), which contains data from the biennial reports of large quantity generators (LQGs) and treatment, storage and disposal facilities (TSDFs), also requires reporting of some discharges to POTWs. Several limitations associated with BRS data, however, are described above. In addition, hazardous waste, once mixed with domestic sewage and sent to a POTW for treatment, is no longer considered a hazardous waste and is therefore not reported to BRS.

Section 1004(27) of the Resource Conservation and Recovery Act (RCRA) provides that once hazardous waste is discharged directly or indirectly to surface waters, the waste is not subject to BRS reporting. Hazardous waste must be reported only if it receives on-site treatment or is stored in a RCRA permitted unit prior to discharge. If it receives treatment or is stored in an exempt unit (e.g., tanks or totally enclosed treatment units), the waste is reported only if the generator qualifies as a large quantity generator, although the exempt waste is not counted when determining whether a facility is a Large Quantity Generator. TRI provides no exemption for discharges to POTWs which receive no prior treatment.

Although the Permit Compliance System (PCS) includes indirect discharge data elements, PCS does not require reporting of indirect discharges (i.e., discharges that pass through a POTW before entering a waterbody, in contrast to waste discharged directly to a waterbody). States have the option of including indirect discharge data, although very few require that this data be reported (Rubin, 1995).

Transfers to Other Off-Site Locations

EPCRA Section 313 requires that facilities reporting to TRI report transfers to off-site locations, including the name, location, and RCRA ID number of the off-site location. The Biennial Reporting System (BRS), which contains hazardous waste data from large quantity generators (LQGs) and treatment, storage and disposal facilities (TSDFs), also requires reporting of off-site transfers on its Form GM. Information requested by BRS includes the EPA ID of the facility to which the waste was shipped, the processes used to treat, recycle, or dispose of the waste at the off-site facility, the off-site

availability code, and the total quantity of waste shipped during the report year (see discussion above of underground injection and land disposal for a more complete description of BRS). BRS also provides data on the volume of hazardous waste shipped off-site for land disposal, a release end-point of relevance to TRI.

There are several difficulties associated with comparing BRS data to TRI data, which are described above in the section covering on-site releases to land.

Review of State Right-to-Know Programs

Under the TRI program, data is submitted to both the U.S. Environmental Protection Agency and to the state or tribal entity in whose jurisdiction the reporting facility is located. With the advent of the federally mandated TRI reporting requirements and the influx of this new information, states with release and transfer reporting requirements of their own changed their programs to minimize program costs to industry and government. In New Jersey, for example, where TRI overlapped with state toxics reporting requirements under the New Jersey Right-To-Know (RTK) program, the RTK reporting requirements were removed to minimize reporting overlap. For more information on state-expanded TRI reporting, a detailed discussion is presented in the "Status of State TRI Programs" section of the TRI Public Data Release, State Fact Sheets. (U.S. EPA, 1999g) This section of the Public Data Release contains a survey administered by the National Conference of State Legislatures to all states on their TRI data use and expansion activities.

As of 1994, only Arizona, Massachusetts, Minnesota, and Wisconsin required or were planning to require expanded state TRI reporting to include non-manufacturing facilities (NCSL, 1995). Under the expanded state requirements, non-manufacturing facilities are required to file Form Rs with the state, but are not required to file with the federal EPA. In addition, some states require facilities to report release information beyond that required by the federal TRI program. Overall, however, the additional data collected by states are far less complete and uniform than would be available under an expanded federal TRI program. Descriptions of how the four state programs differ from federal TRI requirements are given below.

Arizona

In Arizona, any facility defined as a RCRA large quantity generator, regardless of SIC code or number of employees, must determine whether or not it is required to file a Form R with the state Department of Environmental Quality (DEQ). Arizona defines a RCRA large quantity generator as 1) any facility which generates an average of 1 kg/month of acutely hazardous waste as defined in 40 CFR §261, or 2) any facility which generates an average of 1,000 kg/month of hazardous waste in a calendar year exclusive of episodic, accidental, or remediation-related releases or occurrences.

Although large quantity generators are not subject to the SIC code restrictions and employee threshold given in the federal TRI program, they are subject to the same manufacture/process/use thresholds as the federal program. Those large quantity generators that generate below-threshold volumes of TRI chemicals are not required to file Form Rs to the state. Rather, they are required to fill out and send in a non-quantitative questionnaire to indicate that they do not produce above-threshold volumes of any TRI chemical. The information from the questionnaires is entered into the state database. In addition, all facilities that file Form Rs with the state must also file a pollution prevention plan with the DEQ (Quinn, 1995).

The state TRI program provides paper copies of annual TRI data (including facility- and chemical-specific data) to all TRI reporters, to a mailing list of interested individuals, and to public libraries. In addition, the DEQ generates reports using state TRI data on request. The DEQ has found that the data generated by these expanded facility requirements are useful in that they positively verify TRI chemical waste generation by large quantity generators in other SIC codes, including whether or not they generate below-threshold levels of TRI chemicals (Quinn, 1995).

Massachusetts

The Massachusetts Toxics Use Reduction Act of 1989 (TURA) covers facilities in the following SIC codes:

A. mining (SIC codes 10-14)
B. manufacturing (SIC codes 20-39),
C. transportation, communications, utilities (SIC 40, 44-49),
D. wholesale trade (SIC 50 and 51),
E. personal services (SIC 72),
F. business services (SIC 73),
G. automotive repair, services, and parking (SIC 75),
H. and miscellaneous repair services (SIC 76).

Initially, TURA covered the same facilities and chemicals as the federal TRI program. As of 1995, TURA requirements expanded to include facilities under the above SIC codes which use chemicals that are listed as hazardous substances under §101(14) and §102 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). (These chemicals are listed at 40 CFR §302.4) Massachusetts otherwise uses the same employee and manufacture/process/use thresholds and chemical list as the federal TRI program (TURI, 1994). Federal facilities are exempt from TURA reporting requirements.

Facilities covered under TURA must file an annual report called a Form S (similar to Form R) which identifies the listed chemicals used during the year in each production process, the percentage reduction of toxic by-products and toxic emissions compared to a defined base year, and the toxic use reduction techniques used to reduce the wastes. Data from the Form Ss are entered into the state Toxics Use Reduction Inventory. In addition, as of 1995, facilities are required to prepare a detailed toxic use reduction plan every two years (MA DEP, 1993).

Minnesota

The 1993 Minnesota Legislature amended the Minnesota Emergency Planning and Community Right-to-Know Act to expand reporting requirements as of reporting year 1993. Facilities in the following SIC codes that meet the employee and chemical usage criteria must report chemical releases and transfers to the Emergency Response Commission:

A. metal mining (SIC 10),
B. rail transport (SIC 40),
C. air transport (SIC 45),
D. utilities (SIC 49),
E. chemical and allied products (SIC 5161 and 5169),
F. plastic materials and shapes (SIC 5162),
G. hospitals (SIC 806),
H. medical and dental laboratories (SIC 807),
I. colleges and universities (SIC 822),
J. photo finishing (SIC 7389),
K. solvent recovery facilities (SIC 7389),
L. testing laboratories (SIC 8734), and
M. correctional institutions (SIC 9223).

However, Minnesota specifically exempted fossil fuel combustion for the production of electricity or steam. It maintained current TRI exemptions, definitions, and reporting thresholds, including the alternate reporting threshold for facilities that have total annual reportable amounts that do not exceed 500 lbs per year. Facilities in SIC code 1011 (iron ores) petitioned successfully to be exempt from TRI reporting because they are relatively "clean."

As a result of these exemptions, most facilities that fall under the expanded SIC codes do not have to submit Form R reports. The most significant additional reporting from Minnesota's industry expansion comes from airports due to their use of ethylene glycol.

Wisconsin

As of 1996, Wisconsin required mining operations (SIC codes 10 through 13) to file Form Rs to the state. In addition, public agencies, public and private educational facilities, and public and private research facilities in Wisconsin are subject to federal TRI reporting requirements. Aside from the additional SIC codes, Wisconsin's Right-To-Know reporting requirements are identical to those of the federal TRI program (NCSL, 1995; BNA, 1995; Dunst, 1995)

Conclusion of Availability of TRI-like Data at the State Level

Although some states have built on the foundation of TRI data with additional state reporting requirements, their data do not have major redundancies with, and therefore are not substitutes for, the current TRI or the proposal to expand TRI. The advent of federally mandated TRI reporting has resulted in many states adopting Form R for their state reporting, and provided a strong impetus for states to remove redundancies in their own reporting in order to minimize costs to facilities in their jurisdictions. Information collected by states above and beyond federal reporting requirements may be available in piecemeal fashion.

Inventory Data

For each listed toxic chemical, a regulated facility must complete data element 4.1 of Part II of Form R, which asks for the "Maximum Amount of the Toxic Chemical On-Site at Any Time During the Calendar Year." Maximum amounts (in pounds) are reported in ranges that increase by powers of ten. Alternative sources of "maximum amount on site" chemical inventory data include EPCRA Section 312 Tier I and II reports.

EPCRA (§311-312) requires that states establish plans for local chemical emergency preparedness and that inventory information on hazardous chemicals be reported by facilities to state and local authorities. "Hazardous chemicals" are defined under the Occupational Safety and Hazard Administration's (OSHA) requirements -- essentially any chemical that poses physical or health hazards. The relevant regulations are detailed in 40 CFR §370. Data elements similar to both TRI and Tier I/II reports make EPCRA Tier I/II the best candidate for an alternative source of TRI "maximum amount on site" inventory information.

EPCRA Section 312 outlines a "two-tier" approach for annual inventory reporting. All facilities that store hazardous or extremely hazardous substances must submit at least a Tier I and often a Tier II form as well. Tier I requires reporting on broad categories of physical hazards such as fire, sudden release of pressure, and reactivity, as well as acute and chronic health hazards. Upon request by a Local Emergency Planning Committee (LEPC), State Emergency Response Commission (SERC), or fire department, a facility may be required to submit the more detailed Tier II form (which may be submitted instead of the Tier I form). Tier II requires chemical specific information by CAS number.

For example, a Tier I report might state that a facility stores 3,000 pounds of chemicals that pose chronic health hazards, while a Tier II form for the same facility would report 1,000 pounds of toluene and 2,000 pounds of benzene on-site. Approximately 33 states require regulated facilities to submit Tier II forms, and most of the remaining states recommend that facilities submit Tier II forms.

A regulated facility is required to submit this information to each of the following groups: LEPCs, SERCs, and the local fire department with jurisdiction over the facility. A facility must submit an annual report for every chemical which requires an MSDS and which exceeds certain reporting thresholds for the amount of chemical stored on site at any one time. The reporting threshold for chemicals listed under EPCRA §302 as Extremely Hazardous Substances (EHSs) is the threshold planning quantity (TPQ), or 500 pounds, whichever is lower.[7] For all other chemicals with MSDSs, the threshold is 10,000 pounds. In general terms, the inventories contain information about the maximum quantity stored, the average quantity on-site at any given time, the location of the chemicals at the facility, and the number of days on-site.

Chemical coverage: The chemicals covered under Section 312 are all those defined as hazardous or extremely hazardous substances in Section 311 (essentially any substance that poses a health or physical hazard). All of these substances, for which facilities must submit MSDSs, are covered under OSHA's Hazard Communication Standard regulations. OSHA's definition of "hazardous chemical" not only includes toxic chemicals but also chemicals which are considered health hazards, irritants, sensitizers, corrosive, fire hazards, explosive, as well as reactive. Consequently, many more chemicals are included under OSHA's rule than under TRI.

Industry/facility coverage: Facilities that are required to submit MSDSs to the state authorities for hazardous chemicals on site also must submit Tier I and/or Tier II forms. While there are no SIC exemptions for facilities that are covered under the reporting threshold requirements, facilities not included under OSHA's Hazard Communication Standard (e.g., mines) do not have to file reports. Because the Section 312 thresholds cannot be used to determine whether a facility covered under Section 312 also would be covered under Section 313 (e.g., whether a facility which stores 10,000 lbs. of a toxic chemical listed under TRI also meets Section 313 thresholds), the extent to which facilities potentially subject to TRI reporting would be captured by Section 312 is unknown.

Release statistics/reporting frequency: Facilities covered under EPCRA Section 312 must submit their Tier I and/or Tier II reports containing data with respect to the preceding calendar year to their respective states annually on or before March 1.

When completing a Tier II form, a covered facility must report the following information:

[7] The Extremely Hazardous Substances and their TPQs are listed in 40 CFR Part 355, Appendices A and B.

The chemical name or the common name of the chemical and the CAS registry number (as it appears on the MSDS);

- Indication of whether the hazardous chemical is an extremely hazardous substance;
- Indication of whether the hazardous chemical is present at the facility in its pure state or in a mixture, and whether it is a solid, liquid, or gas;
- The applicable health and physical hazard categories;
- An estimate (in ranges) of the maximum amount of the hazardous chemical present at the facility at any time during the preceding calendar year (e.g., 10,000 to 99,999 pounds);
- An estimate (in ranges) of the average daily amount of the hazardous chemical present at the facility at any time during the preceding calendar year;
- The number of days the hazardous chemical was found on-site at the facility;
- A brief description of the manner of storage of the hazardous chemical at the facility;
- A brief description of the precise location of the hazardous chemical at the facility, and
- An indication of whether the owner or operator of the facility elects to withhold location information on a specific hazardous chemical from disclosure to the public.

Facilities that choose to withhold from the public certain data on hazardous chemicals must nevertheless provide the information to the relevant authorities via the Tier II Confidential Location Information Sheet. The information contained on these sheets is not made available to the public.

Accessibility: The general public may access Tier I and Tier II information on a facility by facility basis by forwarding a written request to either the SERC or the LEPC. Tier II information on facilities which do not meet the reporting threshold requirements also may be obtained from the SERC or the LEPC if a "general need" can be demonstrated on the part of the requester. In these cases, the relevant authorities will request that the relevant facility or facilities fill out Tier II forms.

The ability to access state EPCRA data at a higher level of aggregation depends partly on the information technology resources of the state authority responsible for maintaining the data. Approximately one half of all the states have some type of computerized database, and of those, five states (Arkansas, Maryland, New Jersey, Oregon, and Rhode Island) store full Tier II data in a

modem-accessible format. However, because these databases were created using different software and possess different database structures, it is a considerable challenge to aggregate the data contained within them. At the present time, an integrated national repository of Tier I and Tier II data does not exist.

In some states that do not yet maintain computerized databases of Tier I and Tier II information, the parties requesting information are required to cover the copying and administrative costs of the data retrieval. Because some EPCRA reporting programs are unfunded, fees charged for this service range from low to substantial. In other states, the requesting parties must go to the office and perform the copying themselves (ICF, 1996).

Conclusion on the Availability of Inventory Data

Tier I forms only request information based on possible health and physical hazards, and do not ask for chemical-specific data. The level of detail and the number of chemicals covered in Tier II "maximum amount on site" inventory data surpasses the chemical inventory data requested on TRI Form R. Not all states, however, require submission of Tier II forms. Therefore, some of the facilities that are covered under TRI do not have to report as detailed inventory information under EPCRA Section 312.

There also are significant difficulties with respect to public access of Tier I and Tier II data. All information is reported to state authorities; there is no national integrated database. In addition, because not all states have set up computerized databases to manage this information, extensive data retrieval and analysis is often both cumbersome and expensive.

Pollution Prevention Data

Form R requires that facilities report a variety of information that can be used for pollution prevention analyses, including non-quantitative reporting of pollution prevention activities, production ratios, and chemical-specific amounts of materials treated, recycled, released (one-time, and for the entire year), and shipped off-site in wastes.

EPA Databases with Pollution Prevention Data

Besides TRI, waste prevention and management data are collected at the federal-level through RCRA Biennial reports. RCRA biennial report data are compiled in the Biennial Reporting System database (BRS), as discussed below. The level of chemical specificity and flowthrough estimates for waste prevention and management information in BRS and TRI are not available in other federal data sources.

BRS contains pollution prevention information on hazardous waste large quantity generators and treatment, storage, or disposal facilities. Data are collected primarily by states, and are collated by EPA into the BRS database system. States are not required to use official BRS forms for the submission of data; EPA transfers data on state forms into the BRS system as necessary (ICF, 1993).

All large quantity generators must submit the following facility-specific information to BRS:

- whether any source reduction or recycling activities took place during the reporting year, and
- limiting factors that have affected source reduction and/or recycling activities.

In addition, for each hazardous waste generated, a generator must specify the following pollution-prevention related data:

- RCRA waste code and hazardous waste quantity generated;
- efforts to reduce the volume and toxicity of wastes, and
- reductions in volume and toxicity actually achieved compared with those achieved in previous years.

If a hazardous waste has been minimized as the result of new activities implemented in the reporting year, the generator also must report the following pollution-prevention related information:

- quantity of waste recycled;
- source reduction quantity; and
- waste minimization activity implemented (e.g., waste segregation, inventory control).

RCRA Biennial reports provide some qualitative and quantitative pollution prevention information, but, at a systems level, do not have the same facility or chemical coverage as TRI. The BRS system is not a substitute for TRI pollution prevention data. RCRA Biennial reports only include hazardous wastes; pollution prevention data contained in TRI includes information on wastes or process by-products in all production phases and media. In addition, the chemical reporting universe is different between the two systems. The universe of toxic chemicals regulated under TRI differs from the universe of listed hazardous wastes or chemicals with hazardous waste characteristics regulated by RCRA.

Also, the facility universes captured by the two systems are not the same. RCRA Biennial reports are only completed by RCRA large quantity generators, while TRI reports are required by facilities in manufacturing industries that exceed employee as well as chemical manufacturing, process,

and use thresholds. The BRS facility universe is also different due to RCRA waste exclusions and exemptions. For example, wastes mixed with domestic sewage that are excluded from BRS reporting can be an indirect water discharge that may be covered under TRI reporting.

The pollution prevention reporting in BRS contains information on hazardous waste minimization and recycling efforts. Where this information does overlap with TRI pollution prevention reporting, it does not contain the same level of detail. For example, in some cases BRS pollution prevention information applies to wastestreams consisting of chemical mixtures, while TRI pollution prevention data are chemical specific. Since BRS waste codes are more general in nature than CAS numbers, a facility's waste mixture could change from year to year, and yet it might report the same waste code. Lack of precision in reporting of waste contents also could result in a situation where a facility reduces the aqueous quantity of its wastes, and thus appear to be preventing pollution. However, by changing its waste mixture, the facility might even increase the amount of toxic material entering the wastestream without modifying its BRS reporting. That the exact contents of a facility's waste mixture cannot always be determined may make it difficult to extract chemical-specific data from BRS.

State Environmental Agency Databases

Under current TRI reporting procedures, facilities send copies of all TRI reports to both state and federal agencies. Many states currently rely on the pollution prevention data received from TRI for planning and targeting purposes (U.S. EPA, 1993), and do not require additional reporting. However, two states, New Jersey and Massachusetts, have passed laws to collect materials accounting pollution prevention data that exceeds that found in Section 8 of Form R. Twelve other states have pollution prevention planning requirements in place, but only Massachusetts and New Jersey currently have mandatory materials accounting.[8]

Massachusetts Pollution Prevention Reporting: The Massachusetts Toxics Use Reduction Act (TURA) has required firms to report on toxic use for individual "production units" at their facilities since July of 1991. Facilities submit annual Toxics Use Reports (Form S) to the Massachusetts Department of Environmental Protection (MDEP) as a supplement to the TRI Form R. With the exception of qualitative source reduction pollution prevention reporting requirements and production ratios, TURA pollution prevention reporting requirements are additional to those collected by TRI.

Form S records information on the quantity of the toxic substance used on a facility-wide and production unit basis. Form S is divided into two parts: 1) cover sheet and 2) chemical reports. The

8. For a detailed comparison of materials accounting data elements reported to TRI, New Jersey, and Massachusetts, see (U.S. EPA, 1995d).

cover sheet contains general facility information, a certification statement, and an identification of production units at the facility. Form S chemical reports must be filed on each listed toxic chemical manufactured, processed, or otherwise used at greater than 10,000 pounds per year (ICF, 1993). The form contains the following information on chemical use and pollution prevention:

A. facility-wide and production unit data for each chemical,
B. year-to-year reporting changes, and
C. production unit reports.

New Jersey Pollution Prevention Reporting: New Jersey has collected toxic chemical release and pollution prevention data longer than the TRI program has been in existence. Since 1979, New Jersey has collected toxic chemical release and pollution prevention data through a variety of separate programs and activities, gradually narrowing down the scope of these reporting requirements as TRI was introduced and expanded to include pollution prevention. In fact, the results of an Industrial Survey, which collected release and throughput data from 15,000 New Jersey facilities, were used to develop the list of SARA Title III chemicals (U.S. EPA, 1995d). For these reasons, New Jersey data, unlike data collected in Massachusetts, still overlaps somewhat with data collected on TRI Form R. New Jersey pollution prevention data also contain detailed throughput information which exceeds that currently contained in TRI. These throughput data require facilities to account for all amounts of the chemical brought or produced on-site, shipped off-site in products, destroyed on-site through treatment, recycled on-site, and released to the environment or shipped off-site in wastes.

New Jersey's additional reporting requirements apply to all TRI chemicals and all facilities covered by TRI (SIC codes 20-39). Originally, New Jersey required facilities manufacturing, processing, or using an Environmentally Hazardous Substance (EHS) to report toxic chemical release information (U.S. EPA, 1995d). The original EHS list was comparable to the list of chemicals generated by the Industrial Survey mentioned above, and therefore similar to the original SARA Title III list. The list of chemicals for which New Jersey now collects toxic chemical release and pollution prevention information has been expanded to contain those in the national TRI listing.

Alternative Sources of Emergency Release Data

TRI Form R requires that facilities report the quantity of TRI listed chemicals released to the environment as a result of remedial actions, catastrophic events, or one-time events not associated with production processes. Accidental release data reported to TRI also are potentially reported to the Emergency Response Notification System (ERNS) and OSHA's Integrated Management Information System (IMIS). However, as discussed below, ERNS is a database of initial notifications, made during or immediately after a release occurs. For this reason, data within ERNS may be incomplete or inaccurate and will not substitute for TRI emergency release data. IMIS is maintained by OSHA and

only contains records of accidental releases resulting in worker fatalities or illness. This level of reporting is appropriate given that OSHA's mission is to protect worker health and safety; however, IMIS can not be used as a substitute for TRI emergency release data.

Emergency Response Notification System (ERNS)

ERNS is an EPA database that contains release notifications of oil and hazardous substances reported to the National Response Center (NRC), the ten EPA Regions, or the U.S. Coast Guard. ERNS contains data reported under the release notification requirements of several federal statutes: Section 103 of CERCLA; Section 304 of EPCRA; Section 1808(b) of the Hazardous Material Transportation Act (HMTA); and Section 311 of the Clean Water Act (CWA). Figure 3 summarizes the four primary regulations requiring accidental release reporting. ERNS reports may include information on the discharger, material released, amount released, source of release, incident location, and environmental medium into which the release occurred. Estimates of the quantities released are available in about two-thirds of notifications. Oil releases that violate the CWA account for the majority of ERNS notifications (roughly 57 percent). CERCLA substances account for, on average, 19 percent of all notifications in ERNS, and notifications of other chemicals account for the remaining 24 percent of notifications. ERNS notifications are typically used by On-Scene Coordinators (OSCs) to determine the appropriate federal response action.

FIGURE 3 - Statutes Requiring Accidental Release Reporting

Statute	Reporting Requirements	Percent of Notifications
CERCLA	Requires that the release of a CERCLA hazardous substance that meets or exceeds the reportable quantity (RQ) set forth in 40 CFR §302.4 must be reported to the NRC.	19 percent
EPCRA	Requires that the release of an RQ or more of an EPCRA extremely hazardous substance or a CERCLA hazardous substance (one pound or more if a reporting trigger is not established by regulation) that results in exposure of people outside the facility boundary be reported to State and local authorities.	<24 percent
HMTA	Requires that the release of a DOT hazardous material during transportation be reported to the NRC under certain circumstances such as death, injury, significant property damage, evacuation, highway closure, etc.	<24 percent

CWA	Requires that the release of oil be reported to the NRC if the release: 1) violates applicable water quality standards; 2) causes a film, sheen or discoloration of the water or adjoining shoreline; or 3) causes a sludge or an emulsion to be deposited beneath the surface of the water or upon the adjoining shorelines.	57 percent
Source: U.S. EPA, 1995e.		

ERNS is a database of initial notifications, made during or immediately after a release occurs. Because the data are reported at such an early stage, the exact details of the release are often unknown and are therefore not reported. It is estimated that two-thirds of the 193 data fields in ERNS are not completed for most release notifications. In addition, duplicate reports may appear in the database because of follow up calls that are not identified as such or observers reporting a release that has already been reported. Approximately five percent of ERNS records are estimated to be duplicates. (U.S. EPA, 1995e)

Integrated Management Information System (IMIS)

IMIS is an OSHA database that contains records of workplace inspections conducted by OSHA industrial hygienists. Two general types of inspections are conducted by OSHA: 1) Scheduled or planned inspections which are on-site enforcement inspections to verify compliance with OSHA standards, and 2) Unplanned inspections which are investigations of workplace incidents where there is one fatality or three or more worker hospitalizations (five or more worker hospitalizations were required to trigger an inspection before 1993). Inspection data are input and stored within IMIS, providing a record of OSHA activities at each workplace that has been inspected.

OSHA is estimated to add more than 120,000 inspection records per year, of which 4,000-5,000 are related to accidents. Accident inspections include a short description of the incident, information regarding each worker that is injured, and any hazardous substances that may be involved. It is estimated that 100 incidents reported each year involve hazardous substances. A four digit hazardous substance code is entered into IMIS rather than a CAS number. The quantity of hazardous material released is not entered. In addition, it can not be assumed that the reported death or injury was a result of an accidental release even in cases where a hazardous substance was involved. For example, if a maintenance person cleans the inside of a storage tank and is asphyxiated by the nitrogen rich environment, the death is not the result of an "accidental release". (U.S. EPA, 1995e)

Summary on Availability of Pollution Prevention and Accidental Release Data

The data systems discussed above cannot replace TRI's pollution prevention and accidental release data. Difficulties exist in chemical and facility coverage, reporting frequency, and the level of

data detail. Specifically, RCRA Biennial reports cannot easily be used as a substitute for TRI pollution prevention data. While BRS provides some qualitative and quantitative pollution prevention information, it does not have the same facility or chemical coverage as TRI. BRS only includes hazardous wastes, while TRI pollution prevention data includes information on wastes or process by-products in all production phases and media. Because BRS collects data organized by BRS waste codes, it also lacks the chemical-specific detail that TRI contains. In addition, the facility and chemical reporting universes are different between the two systems.

Overlap of State pollution prevention data with that found in TRI is minimal; state data could not be used to replace current TRI pollution prevention reporting requirements. Under current TRI reporting procedures, facilities send copies of all TRI reports to both state and federal agencies. Many states have come to rely on this easily available source of pollution prevention data. As Massachusetts and New Jersey demonstrate, even those states that had taken a proactive role in collecting toxics release and pollution prevention data scaled back their programs with the introduction of mandatory TRI reporting. No state program collects all of the pollution prevention data currently contained in Form R, though some states (e.g., New Jersey and Massachusetts) augment TRI pollution prevention data with requirements additional to those contained in Section 8 of Form R. These data, such as materials accounting data, are used at the state level for a variety of purposes, including benchmarking of facility pollution prevention efforts and the determination of toxic material flows in production processes.

In addition, accidental release data reported to ERNS and IMIS do not substitute for TRI accidental release data. ERNS is a database of initial notifications, made during or immediately after a release occurs. For this reason, data within ERNS may be incomplete or inaccurate. Furthermore, IMIS only contains records of accidental releases resulting in worker fatalities or illness and does not include records of CAS numbers or quantities released.

Value Added from the TRI Reporting System

In addition to containing data not available through other sources, TRI enhances the usefulness and functionality of the data by allowing public access to the data, linking release data across media (e.g., water, air, land), and providing definitional consistency for the units of measurement. These features give TRI additional advantages over any emissions data system that might be assembled from non-TRI sources.

Perhaps the most important advantage TRI possesses over non-TRI sources is the information that can only be found in TRI. As described, data unique to TRI include chemical-specific multimedia release information as well as important pollution prevention information. For example, AFS currently only tracks a limited amount of HAP emissions, and BRS does not track hazardous waste treatment,

transfer, or disposal at a chemical-specific level. TRI can provide this as well as other types of information not available elsewhere.

Because an important part of TRI's mission is to provide emissions data to the public, many different methods of access to TRI have been implemented. Data analysis difficulties aside, access issues make it very difficult for the general public to assemble non-TRI data into a TRI-like form. Current methods of accessing TRI include on-line resources such as EPA's Envirofacts, the National Library of Medicine's TOXNET, RTK NET, electronic media such as CD-ROM, and printed media. Some alternative sources, such as the ENVIROFACTS include some of these databases. Other databases, such as the Freedom of Information Act, tend to be slow and cumbersome, but TRI solves many of these access problems by placing all of the information in one location, and providing many avenues of access to that data.

Another major problem associated with using non-TRI sources for TRI-like data is linking facility release information across various release media. In the past, the tool used to identify facilities reporting to multiple systems was the Facility Indexing System (FINDS). FINDS was a centralized inventory of facilities monitored or regulated by EPA, and served as an index database to other EPA Program Office databases. This system will be will be replaced with the Facility Registry System (FRS), a system developed through the assistance of the Facility Registry System.

The agency is also working on a number of other initiatives designed to make access easier for EPA and the public. Some of these initiatives and projects include the One Stop Reporting Program, the Common Sense Initiative, the Electronic Data Interchange Initiative, the Enforcement and Compliance Information Initiative, Environmental Monitoring for Public Access and Community Tracking , IDEA and others.

The above advantages notwithstanding, it is important to recognize that these systems have certain shortcomings with respect to any effort to assemble TRI-like information from non-TRI sources. For example, one significant difficulty with IDEA involves problems with the FINDS linkages themselves. Because of various data inconsistencies, many facilities are not linked to all of their permits through IDEA, or have incorrectly linked permits. TRI's reporting mechanism helps to reduce this problem within TRI, where data from a facility is reported at one time in one place. In addition, because IDEA is designed to primarily provide compliance and enforcement data, the system does not always include emissions data even when such data exists. For example, while IDEA contains AFS compliance data, it does not contain AFS emissions data. Consequently, direct access to AFS is required to obtain AFS emissions data, which still does not include much information on air toxics. Finally, the general public would probably encounter difficulties using IDEA because of access restrictions and the technical knowledge required to effectively utilize IDEA.

The lack of definitional consistency also can result in difficulties in understanding information aggregated across non-TRI databases. A substantial amount of effort would be required to overcome discrepancies in units of measure, chemical coverage, reporting thresholds, reporting exemptions, and reporting frequencies in the various databases. TRI overcomes many of these problems by allowing the user to view cross-media data using a single set of reporting definitions and requirements.

The different units and data aggregation methodologies used by various non-TRI sources can lead to data incompatibilities. For example, because PCS data are reported in terms of PCS *parameters* (usually chemical concentrations as opposed to units of mass), some fairly involved calculations must take place before that data can be converted into TRI-like units. For BRS, facilities report their hazardous waste throughput in terms of aggregated waste *codes*, which cannot always be easily broken down to specific chemicals. Discrepancies between the way chemical information is reported to the various non-TRI databases can make it difficult or even impossible to accurately sum totals of pollutants across databases. Because all TRI release and transfer data are reported in a uniform fashion, no such difficulty exists in TRI.

Databases often also have different reporting frequencies, which can make it difficult to assemble high quality historical data at the facility level. BRS requires facilities to report data every two years, whereas AFS requires but does not enforce annual reporting. Because TRI requires annual reporting from all covered facilities, TRI effectively overcomes this problem.

In summary, the value which TRI alone adds to the community at large is significant. The many technical, access-related, and data coverage problems associated with attempting to use non-TRI sources for TRI data makes impractical the substitution of these sources for TRI.

5(b) Consultations

EPA has consulted with a large number of individuals and organizations throughout all segments of the public in the development and continued implementation of the TRI program. Since the initial development of the program, feedback through EPA's outreach efforts have been received from various organizations, including environmental and public interest groups, trade associations, and individual representatives. This feedback is continually sought and incorporated in the ongoing evolution of the 313 program.

During the initial development of the TRI program, EPA consulted with a large number of individuals and organizations throughout all segments of the public in developing the rule, form, and instructions. This consultation has continued throughout the operation of the program, and has been expanded due to the proposed expansion of TRI to include additional industry groups. Among the industry-oriented organizations that are or have been involved with the TRI program are:

American Association of Exporters and Importers
American Chemical Society
American Coke and Coal Chemical Institute
American Gas Association
American Iron and Steel Institute
American Petroleum Institute
American Pharmaceutical
American Public Power Association
American Textile Manufacturers Institute
American Trucking Association
American Warehouse Association
Air Transport Association
American Wood Preservers Institute
Associated Gas Distributors
Association of Metropolitan Sewerage Agencies
Cement Kiln Recycling Coalition
Chemical Manufacturers Association
Chemical Producers and Distributors Association
Chemical Specialties Manufacturers Association
Chem-Tex Solvents Corporation
Chlorine Institute
Domestic Petroleum Council
Dry Color Manufacturers Association
Edison Electric Institute
Electric Power Institute
Environmental Industries Association
Environmental Technology Council
Fertilizer Institute
Hazardous Material Advisory Council
Independent Lubricant Manufacturers Association
Independent Liquid Terminals Association
Independent Petroleum Association of America
International Precious Metals Institute
Interstate Mining Compact Commission
Interstate Oil and Gas Compact Commission
Lead Industries Association
Metal Powder Industries Federation
National Agricultural Chemicals Association
National Air Transport Association

National Association of Chemical Distributors
National Association of Chemical Recyclers
National Association of Manufacturers
National Association of Printing Ink Manufacturers, Inc.
National Electrical Manufacturers Association
National Food Processors Association
National Mining Association
National Rural Electric Cooperative Association
National Screw Machine Products Association
National Solid Waste Management Association
Petroleum Marketers Association of America
Silver and Gold Institute
Small Business Administration
Society for Mining, Metallurgy and Exploration
Solid Waste Association of North America
Steel Service Centers Institute
Synthetic Organic Chemical Manufacturers Association
The Society of the Plastics Industry, Inc.
U.S. Chamber of Commerce

With the addition of Federal facilities to TRI in 1993 (Executive Order 12856), other Federal agencies such as the Department of Defense and Department of Energy now play an active role in TRI, including as participants in Interagency Workgroups. In addition to the industry-oriented groups, EPA has also worked with public interest groups in the development of the TRI program. Environmental and public interest groups assisted in the development of the Form R, testing of the NLM database, and have provided feedback on a wide range of public access issues. Among the environmental and public interest organizations who have been, or are, involved with TRI are:

AFL-CIO
American Library Association
Environmental Defense Fund
Environmental Law Institute
INFORM
Information Industry Association
Mineral Policy Center
National Wildlife Association
Natural Resources Defense Council
OMB Watch
Sierra Club

U.S. Public Interest Research Group
Working Group on Community Right-to-Know

Discussions with all of the above groups have resulted in changes to the program that have had beneficial effects, including burden reduction.

Over the course of the past eight years, EPA has used the regularly-held public meetings of the Forum on State and Tribal Toxics Action (FOSTTA), which represents state environmental agencies, and the National Advisory Council on Environmental Policy and Technology (NACEPT), which includes representatives from industry, environmental organizations, states, and academia, as public venues to consult on TRI and related issues. Major issues discussed through these groups include the expansion of TRI to include both additional chemicals and facilities; implementation of PPA requirements; redesign of the Form R; and development of the Alternate Reporting Threshold Modification. EPA officials routinely meet with representatives from industries, states, local governments, environmental organizations, and community groups on specific issues related to TRI, as the need for consultation arises.

EPA also makes a concerted effort to receive input from small businesses. Many trade associations and other industry organizations with which EPA has held discussions include small businesses as members or participants. These groups have represented the interests of some small businesses to EPA, and have helped to inform businesses about TRI. In addition, EPA has addressed forums such as the Small Business Roundtable regarding its initiatives, and has briefed officials of the Small Business Administration as well as EPA's Small Business Omsbudsman and Regional Small Business Liaisons.

Finally, EPA agency established a series of Stakeholder meetings in 1997 and 1998 to address issues concerning reporting requirements and possible changes to the Form R. Specific issues discussed at these meetings included ways of improving the TRI program, ways of reducing the burden of TRI reporting, and possible improvements to the TRI reporting form.

5(c) Effects of Less Frequent Collection

Section 313 requires annual reporting. Section 313(I) permits EPA to modify the reporting frequency by rulemaking, after notification to Congress. However, EPA may not permit less frequent reporting unless it can find that such modification is consistent with the purposes of the Act, as determined by previously submitted Form Rs. Since TRI represents the best available database tracking toxic chemical releases in the U.S., changes in reporting frequencies would have profound impacts on the quality and value of these data for purposes of planning and establishing baselines in both government and industry.

Less frequent reporting would also significantly delay the availability of the data to the public. Form Rs are required to be submitted on or before July 1 following the year in which the reported releases and transfers occur, and then national data are available from EPA within a year after that. Public access to the most current toxic chemical release data and other waste management information possible could then be severely limited if reporting were to occur less frequently.

5(d) General Guidelines

This ICR adheres to the guidelines stated in the 1980 Paperwork Reduction Act, as amended, OMB's implementing regulations, and all applicable OMB guidance.

Although reporting facilities are required to identify the chemical for which reports are submitted, they can claim the chemical identity as a trade secret. A generic name must be provided as part of the information made available to the public. EPA securely stores and maintains the true identity of the chemical. This is further discussed in 5(e)(i).

EPA is actively encouraging the use of automated techniques, most notably PC-based report generating programs produced both by the Agency and by the private sector and other submissions on magnetic media. EPA recognizes that not all reporting facilities are able to or are interested in investing the time and funds necessary to employ such automated techniques. The final decision on how to report is ultimately the reporting facility's.

Small facilities (less than 10 full-time employees or equivalent) are exempt from reporting under section 313. An optional range reporting provision and an alternate threshold have been promulgated that afford burden reduction to all facilities but are particularly beneficial to smaller facilities with small releases and wastes.

5(e) Confidentiality and Sensitive Questions

(i) Confidentiality

Respondents may designate the specific chemical identity of a substance as a trade secret. Procedures for submission and review of trade secret claims under section 313 are set forth in 40 CFR 350. This rule implements the general trade secret provisions of EPCRA. When a respondent claims the chemical identity to be a trade secret, EPA, upon substantiation of the claim, will not disclose the identity of the chemical to the public. EPA securely stores forms with trade secret information and allows access to those documents only to persons with Trade Secret clearance. Data made available to the public through any means does not include trade secret information.

(ii) Sensitive Questions

This collection does not request any sensitive information.

6. ESTIMATING THE BURDEN AND COST OF THE COLLECTION

6(a) Estimating Respondent Burden

This section presents the burden of this information collection activity on respondents in terms of the time required for facility personnel to perform the steps outlined in Section 3 of this document. These burden estimates are based partly upon previous ICRs, respondent experience (as reflected in comments to EPA and other parties) and information acquired through site visits.

On October 29, 1999 EPA published a final rule (64 FR 58666) to lower the reporting thresholds for certain persistent bioaccumulative toxic (PBT) chemicals, add chemicals, and revise other reporting requirements. The burden estimates have been revised from the draft version of this ICR (EPA #1363.07, June 23, 1999) to reflect the change in reporting burden as a result of the PBT rule.

The burden to respondents is estimated for Form R requirements (including compliance determination and supplier notification) and petitions. Per-facility or per-report burden estimates are developed for the compliance activities within each category and then multiplied by the number of affected facilities or reports to estimate the total burden to respondents. The burden estimates used by EPA are national average values. As with any average, some facilities will be above the average, and others will be below it. Large, complex facilities may require more than the average time to comply. However, there are many other facilities subject to the rule that are not large or complex. Therefore, EPA believes that its burden estimates represent reasonable national averages.

Form R Requirements

The tasks associated with TRI reporting include the following:

A. **Compliance Determination:** Facilities must determine whether they meet the criteria for Section 313 reporting. This task includes the time required to become familiar with the definitions, exemptions, and threshold requirements under the TRI program, to review the list of TRI chemicals, and to conduct preliminary threshold determinations in order to determine if the facility is required to report.

B. **Calculations and Report Completion:** Facilities must gather data and perform calculations to provide the information required on the form. This task includes the time required to search data sources and the time to complete and review the information.

C. **Recordkeeping and Mailing:** Facilities must maintain recordkeeping systems and mail the report to EPA and the State in which the facility the facility is located. This task includes the time required to transmit or otherwise disclose the information.

D. **Supplier Notification:** Certain suppliers of mixtures or trade name products containing reportable substances must annually notify their customers of the product's composition, if the customer is subject to Section 313 reporting. This task includes the time required to inform customers, either by letter or through the materials safety data sheet (MSDS) for the product.

The remainder of this section discusses the unit burden associated with each specific industry task and the estimated number of facilities performing each task. Activities are organized into two categories: activities that are performed on a per-facility basis and activities that must be performed for each Form R submitted. The hours required to complete each activity are summarized in Table 1. It is estimated that 201,735 facilities must determine compliance each year.[9] Of this total, an average of 27,235 facilities are expected to also perform the report completion and recordkeeping activities.[10] Of the 27,235 reporting facilities, an average of 3,734 facilities are expected to complete supplier

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[9] The Bureau of Census's *County Business Patterns - 1997* indicates that there are 191,745 facilities with 10 or more employees in SIC codes 20 to 39. There are an additional 9,990 facilities in the seven non-manufacturing industry added to TRI that are estimated to perform compliance determ a total of 201,735 facilities performing compliance determination.

[10] For the 1997 reporting year there were 18,892 facilities submitting 60,907 Form Rs. For the TRI Industry Expansion rule, EPA predicted that there would be 6,267 additional facilities submitting 46,154 additional reports. Of these 46,154 reports, 39,033 would be required on Form R and 7,121 would be eligible for Form A certifications. Assuming that 70% of the eligible reports from non-manufacturing facilities utilize Form A during the time period covered by this ICR, there will be an additional 41,169 Form Rs submitted (39,033 + (30% x 7,121)) as a result of the industry expansion rule. Thus, there are estimated to be a total of 25,159 facilities (18,892 + 6,267) submitting 102,076 Form Rs (60,907 + 41,169) during the first year of the ICR.

For the PBT rule (64 FR 58666, October 29, 1999), EPA estimated that 11,257 facilities will submit 19,990 reports, but that only 3,114 of these facilities will be reporting for the first time. (The remaining 8,143 facilities already report to TRI, and are thus accounted for in the 18,892 manufacturing and 6,267 non-manufacturing facilities.) Thus, when reports are submitted as a result of the PBT rule (in the second and third years of this ICR), there are estimated to be a total of 28,273 facilities (18,892 + 6,267 + 3,114) submitting 122,066 Form Rs (60,907 + 41,169 + 19,990). This results in an average across the three years covered by this ICR of 27,235 facilities submitting 115,403 Form Rs.

notification in addition to the other compliance activities.[11] Table 2 presents the subsequent year hours burden according to type of facility, with an average reporting facility submitting 4 Form Rs. The total annual burden to all facilities is discussed in Section 6(d).

[11] Previously, 3,657 facilities were estimated to perform supplier notification. An additional 77 facilities are estimated to perform this activity as a result of the PBT rule, for a total of 3,734 supplier notification facilities.

TABLE 1 - Average Annual Hours Burden by Activity
FORM R

Category	Activity	Average Annual Hours Burden			Total Hours Burden
		Management	Technical	Clerical	
1st Year of the ICR (prior to PBT reporting)					
Per Facility	Compliance Determination	1	3	0	4
	Supplier Notification	0	7	17	24
Per Form R	Calculations and Report Completion	14.3	30.8	2	47.1
	Recordkeeping/Mailing	0	4	1	5
2nd Year of the ICR (Initial Year of PBT reporting)					
Per Facility	Rule Familiarization	12	22.5	0	34.5
	Compliance Determination	1.7	5	0	6.7
	Supplier Notification	0	7	17	24
Per Form R	Calculations and Report Completion	14.3	30.8	2	47.1
	Calculations and Report Completion - new PBT reports	20.9	45.2	2.9	69
	Recordkeeping/Mailing	0	4	1	5
3rd Year of ICR (Subsequent Year of PBT reporting)					
Per Facility	Compliance Determination	1.2	3.5	0	4.7
	Supplier Notification	0	7	17	24
Per Form R	Calculations and Report Completion	14.3	30.8	2	47.1
	Recordkeeping/Mailing	0	4	1	5

TABLE 2 - Average Third Year Hours Burden per Facility
FORM R

Type of Facility	Average Annual Hours Burden			Total Hours Burden
	Management	Technical	Clerical	
Compliance Determination Only	1.2	3.5	0	4.7
Compliance Determination and Form R	58.4	142.7	12	213.1

Compliance Determination, Form R and Supplier Notification	58.4	149.7	29	237.1

Activities Performed on a Per-Facility Basis

Compliance Determination - A facility must report under Section 313 if it: (1) is within an SIC code or industry group covered by the TRI program; (2) has ten or more full-time equivalent (FTE) employees; and (3) manufactures, processes or otherwise uses any of the listed chemicals above the threshold quantities. All facilities must determine if they meet these criteria. It is assumed that most facilities incur little burden to make determinations regarding the first two criteria. It is assumed that many facilities require time for the management and technical staff to determine the types of chemicals used at the facility and whether these chemicals are manufactured, processed, or otherwise used above threshold levels, in order to make the determination under the third criterion.

To make the determination, a facility will typically review whether it manufactures, processes, or otherwise uses any of the chemicals in any quantity, and then determine whether it exceeds a threshold quantity. In many cases, particularly at facilities that do not manufacture, process or otherwise use any listed chemicals, this first activity should be completed within a relatively short period of time. The second activity may involve a more detailed set of calculations.

The average burden for compliance determination was previously estimated to be 4 hours per facility per year. As a result of the PBT rule, facilities will have to make threshold determinations at the lower thresholds. These additional threshold determination activities will take additional time, and will generally take more time in the first year than in subsequent years. EPA has estimated that facilities will require an average 2.7 hours of additional time in the first year of PBT reporting and 0.7 hours of additional time in subsequent years. Thus, total compliance determination burden is estimated to average 4 hours per facility in the first year of this ICR (prior to PBT reporting), 6.7 hours per facility in the second year of this ICR (which is the initial year of PBT reporting), and 4.7 hours per facility in the third year of the ICR (which is the subsequent year of PBT reporting). Thus, the average compliance determination burden during the 3 years covered by this ICR is approximately 5.1 hours per facility. These averages reflect the time requirements of facilities that do not have listed chemicals on-site, have very large or small quantities of listed chemicals (i.e., are significantly above or below the thresholds), or have not had significant changes from the prior year, as well as facilities that have more complex and time-consuming compliance determination requirements.

Supplier Notification - Certain suppliers of mixtures or trade name products containing reportable substances must annually notify their customers of the product's composition if the customer is subject to Section 313 reporting or sells the product to another company that is subject to reporting.

Facilities may be subject to the supplier notification requirements even if they are not covered by the Section 313 reporting requirements. For example, a facility with less than ten full-time employees or that does not meet reporting thresholds may still be required to notify certain customers. Supplier notification is required so that customers can make threshold determinations and complete reports for their own facilities. The notification can be provided by a letter identifying the chemical by name and CAS number, and indicating its percentage by weight in the formulation. It can also be provided on the materials safety data sheet (MSDS) for the product. On average, approximately 24 hours per facility are estimated for compliance with this requirement.

Activities Specific to Completing the Form R

Calculations and Report Completion - Facilities that determine they must report under Section 313 will incur additional costs to retrieve, process, review, and transcribe information to complete each report. Most of the time required for form completion is to calculate releases, transfers, and other waste management practices; relatively little time is required to copy information to the form. The facility must complete one Form R for each listed chemical it is reporting to TRI.

Except for first year reports being submitted as a result of the PBT rule, the burden is estimated to average 47.1 hours per Form R. Calculations and report completion require more time in the first year of reporting than in subsequent years. In subsequent years, facilities will need to verify and update data, review previous calculations, and modify the information reported on the previous year's Form R, rather than estimate or retrieve data for the first time. For first year reports resulting from the PBT rule, the burden is estimated to average 69 hours per Form R; in subsequent years the burden is estimated to average 47.1 hours per Form R. For a facility completing 4 forms in subsequent years, this results in an average estimated burden of 188.4 hours.

Recordkeeping and Mailing - After a facility has completed the form, it incurs additional labor costs for recordkeeping and mailing associated with filing a Form R report. Recordkeeping allows a facility to use the information in making calculations in subsequent years and as documentation in the event it receives a compliance audit. Facilities must maintain records used to provide the information required on the Form R; those records may include estimation methodology and calculations, engineering reports, inventory, incident and operating logs, and other supporting materials. Recordkeeping and mailing are estimated to take an average of five hours per Form R, which works out to 20 hours for a facility filing 4 Form Rs.

Total Average Burden per Respondent

The estimated burden per respondent depends on the type of respondent, the year in which the activities take place, and the number of reports submitted. For example, in the third year of the ICR,

the burden for facilities that only perform compliance determination is estimated to average 4.7 hours per facility. For facilities required to file 4 Form Rs, but not required to comply with supplier notification, the burden in the third year is estimated to average 213.1 hours. For facilities submitting 4 Form R that are also required to comply with supplier notification, the average burden in the third year is estimated at 237.1 hours per facility.

Petitions

The activities required to prepare and file a petition are listed below. Included is a discussion of the burden associated with each activity. The time needed to complete these activities is presented in Table 3. The total annual burden for all petitions is estimated in Section 6(d).

TABLE 3 - Average Hours Burden per Petition

Activity	Average Annual Hours Burden			Total Hours Burden
	Management	Technical	Clerical	
1. Read EPA Policy and Guidance	4	0	0	4
2. Plan Activities	2	1	0	3
3. Prepare Literature Search	2	7	0	9
4. Conduct Literature Search	0	48	0	48
5. Process, Review, and Focus Information	12	74	0	86
6. Write Petition	4	8	6	18
7. Review and Edit petition	4	8	2	14
8. Submit to EPA and File	0	0	3	3
Total Hours per Petition	28	146	11	185

These estimates assume prior knowledge by the respondent of the issues prompting the listing of specific chemicals. An additional assumption was made that the petitioners had no in-house library facilities and, consequently, that they would have to use a university library or similar facility.

Based upon the experience of the previous reporting years, an average of eleven petitions per year are expected. Also, it is assumed that, on average, three chemicals/chemical categories will be included in each petition. Activities where burden is expected to vary with the number of chemicals/chemical categories included in a petition are those activities involving searching for and processing/reviewing data.

Read EPA guidance document and consult with EPA. The reading and interpretation of EPA policy and guidance notice is conducted by management and involves four hours per petition.

Plan activities. The planning activities are conducted jointly by management and technical personnel. Three hours per petition are required to complete these activities.

Prepare literature search. This activity would be conducted by both management and technical personnel, involving about nine hours.

Conduct literature search. The technical staff member conducts this activity, which requires about 48 hours per petition.

Process, review, and focus information. This activity would be completed by both technical and management personnel, involving a total of 86 hours per petition.

Write petition. This activity would be completed by a combination of technical, management, and clerical personnel. About 18 hours are required per petition to complete the writing.

Review and edit petition. A combination of management, technical, and clerical personnel would be involved in this activity, requiring a total of 14 hours per petition.

Submit petition to EPA and file. These activities would be done by the clerical personnel, requiring approximately three hours per petition.

Total respondent burden. The total burden of submitting a petition is estimated to average 185 hours.

6(b) Estimating Respondent Costs

The cost to respondents is based on the time needed to complete the tasks listed in Section 6(a) and the hourly cost of labor at appropriate levels (labor rates). There are no specific capital costs associated directly with this information collection activity. There are some small costs for mailing and supplies. Total annual costs for all facilities are discussed in Section 6(d).

Form R Requirements

To determine the per-facility costs for typical respondents, the unit time estimates for compliance activities are multiplied by the hourly wage rates for the appropriate categories of labor conducting these activities. Hourly wage rates are divided into three categories: managerial, technical, and clerical. Updated 1998 hourly labor rates, including fringe benefits and overhead, were developed by EPA for each of these categories using the methodology developed for EPA's Comprehensive

Assessment Information Rule (CAIR)[12]. The new wage rates were calculated using current data on salaries and benefits for these three labor categories.

Wage data used in developing the basic wage rates for this analysis were derived from 1996 wage information published by the Bureau of Labor Statistics (BLS) for all goods-producing, private industries. The managerial, technical, and clerical wage rates are based on wage information for four BLS occupation categories: engineers, accountants, attorneys, and secretaries. [13] As presented in Table 4, the managerial and technical level wage rates are composites of the BLS wage rates for several occupation categories and levels. The managerial level wage rate is a composite of the wage rates of Engineers (levels VI-VIII), Accountants (levels V-VI), and Attorneys (levels IV-VI).[14] The technical level wage is a composite of the wage rates of Engineers (levels III-VIII) and Accountants (levels (III-VI)[15]. The clerical wage rate is an average of all the clerical wage levels provided by BLS (i.e., levels I-V).

The 1996 composite annual salary estimates were adjusted to first-quarter 1998 dollars using the Employment Cost Index (ECI) for white-collar occupations in private industries. The 1998 adjusted, composite salary for the managerial, technical, and clerical labor categories was then multiplied by benefits and overhead factors to estimate a 1998 loaded, annual salary. Detailed benefits data for white-collar occupations in private, goods-producing industries were used to account for the additional cost of benefits for managerial, technical, and clerical labor. The overhead factor of 17 percent is based on information provided by the chemical industry and chemical industry trade associations. The loaded annual salary was then divided by 2,080 hours to derive the loaded, hourly wage rates used in this analysis for each labor category. The hourly wage rates are $86.86 for managerial personnel, $64.30 for technical personnel, and $25.63 for clerical personnel, all in 1998 dollars.

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[12] Memorandum from J. Karnes to Brian Muehling (EPA/OTS) on Updating of Unit Labor Costs to Reflect Inflation and Industry Comments for Centaur Associates Inc. May 28, 1987.

13. The methodology used for the CAIR analysis also used wage information for chemists in estimating the managerial and technical wage rates. The current methodology does not include chemists in estimating the composite wage rates because updated information on wage levels for chemists was not available from BLS. The Engineer salary information is expected to be similar to Chemist salary information. In addition, BLS data for Level VI attorneys in goods-producing industries were not available, so wages for all private industry level VI attorneys were used instead.

14. Managerial labor is assumed to be composed of operational labor, including engineers or chemists at the plant manager, facility research manager, or higher levels, legal managers, and financial managers.

15. Technical labor is assumed to be composed of operational labor, including senior engineers or chemists equivalent to head process or project engineer, and financial labor, such as accountants. It is assumed that operational labor is used at a five-to-one ratio with financial labor.

Average costs are summarized by activity in Table 5 and per facility in Table 6. In the third year, the average cost per facility for those completing only compliance determination is $329. The average third year cost for a facility performing compliance determination and submitting 4 Form Rs is $14,556, while the third year cost for a facility performing compliance determination, submitting 4 reports, and complying with supplier notification is estimated to be $15,442.

TABLE 4 - Loaded Hourly Wage Rates by Labor Category

Labor Category	Occupation (levels)	June 1996 Average Salary	Weighting Factor	1996 Composite Salary	ECI Ratio 6/96:3/98	1998 Adjusted Salary	1997 Benefits (% Salary)	Overhead (% Salary)	1998 Loaded Annual Salary	1998 Loaded Hourly Rate
	Engineer (VI-VIII)	$104,971	10/17	$61,748						
	Attorney (IV-VI)	$116,255	5/17	$34,193						
	Accountant (V-VI)	$82,030	2/17	$9,651						
Managerial	Composite			$105,592	1.087	$114,779	40.4%	17.0%	$180,662	$86.86
	Engineer (III-VIII)	$83,243	5/6	$69,369						
	Accountant (III-VI)	$65,780	1/6	$10,963						
Technical	Composite			$80,332	1.055	$84,750	40.8%	17.0%	$133,736	$64.30
Clerical	Secretarial (I-V)	$31,502	1/1	$31,502						
	Composite			$31,502	1.063	$33,487	42.2%	17.0%	$53,311	$25.63

[a] Composite Salaries are determined by multiplying average salaries by the weighting factor and summing across occupations.

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U.S. Department of Labor, Bureau of Labor Statistics (1998). USDL News Release: 98-170. April 30. Table 6.

TABLE 5 - Average Annual Cost by Activity
FORM R

Category	Activity	Average Annual Cost			Total Cost
		Management $86.86/hr	Technical $64.30/hr	Clerical $25.63/hr	
1st Year of the ICR (prior to PBT reporting)					
Per Facility	Compliance Determination	$87	$193	0	$280
	Supplier Notification	0	$450	$436	$886
Per Form R	Calculations and Report Completion	$1,242	$1,980	$51	$3,274
	Recordkeeping/Mailing	0	$257	$26	$283
2nd Year of the ICR (Initial Year of PBT reporting)					
Per Facility	Rule Familiarization	$1,042	$1,447	0	$2,489
	Compliance Determination	$148	$322	0	$469
	Supplier Notification	$0	$450	$436	$886
Per Form R	Calculations and Report Completion	$1,242	$1,980	$51	$3,274
	Calculations and Report Completion - new PBT reports	$1,815	$2,906	$74	$4,796
	Recordkeeping/Mailing	0	$257	$26	$283
3rd Year of ICR (Subsequent Year of PBT reporting)					
Per Facility	Compliance Determination	$104	$225	0	$329
	Supplier Notification	0	$450	$436	$886
Per Form R	Calculations and Report Completion	$1,242	$1,980	$51	$3,274
	Recordkeeping/Mailing	0	$257	$26	$283

TABLE 6 - Average Third Year Cost per Facility
FORM R

Type of Facility	Average Annual Cost			Total Cost
	Management $86.86/hr	Technical $64.30/hr	Clerical $25.63/hr	
Compliance Determination Only	$104	$225	0	$329
Compliance Determination and Form R	$5,073	$9,176	$308	$14,556
Compliance Determination, Form R and Supplier Notification	$5,073	$9,626	$743	$15,442

Petitions

The primary cost to respondents for developing and submitting petitions under Section 313(e) will be the labor costs associated with the activities outlined in Section 6(a) of this document. These costs are the product of the labor hours expended to prepare the average petition, the wage rates for the employees involved in preparing the petitions, and the average number of petitions submitted annually. The unit cost estimates for the preparation of a petition are presented in Table 7. The wage rates shown are those developed in the previous section of this ICR.

TABLE 7 - AVERAGE COST PER PETITION

Activity	Average Annual Cost			Total Cost per Petition
	Management $86.86	Technical $64.30	Clerical $25.63	
1. Read EPA Policy and Guidance	$347	$0	$0	$347
2. Plan Activities	$174	$64	$0	$238
3. Prepare Literature Search	$174	$450	$0	$624
4. Conduct Literature Search	$0	$3,086	$0	$3,086
5. Process, Review, and Focus Information	$1,042	$4,758	$0	$5,801
6. Write Petition	$347	$514	$154	$1,016
7. Review and Edit petition	$347	$514	$51	$913
8. Submit to EPA and File	$0	$0	$77	$77
Total Cost per Petition	$2,432	$9,388	$282	$12,102

Based upon the prior years of implementation of Section 313, it is assumed that approximately 11 petitions will continue to be submitted annually. It is assumed that some additional effort will be required to prepare a petition that combines several chemicals, but also that economies of scale will

prevent costs from rising linearly (for the purposes of this ICR, it is estimated that three chemicals will be combined per petition, on average). It is also assumed that the cost to prepare a petition requesting EPA to delist a chemical does not differ significantly from the costs of preparation to list a chemical. The total average unit cost to prepare a petition is estimated to be $12,102.

6(c) Estimating Agency Burden and Cost

This section estimates the burden and costs to EPA to process Form R reports based on data characterizing the resources used in previous years. Burden and costs are incurred by EPA for five categories of activities: data processing, outreach and training, information dissemination, policy and petitions, and compliance and enforcement. These activities are described in detail in Table 8.

TABLE 8 - EPA ACTIVITIES FOR FORM R

Category	Description
Data Processing	Data entry – entering the information into the database, microfilming or microfiching the reports, and filing all reports; Data quality – reviewing reports for completeness, errors, and inconsistencies; making inquiries to resolve discrepancies; and reentering corrected data; Magnetic media support – distributing computer program for electronic submissions; Programming and operating the EPA mainframe and local area network; Data analysis – developing tools to use TRI data, analyzing data to support EPA needs, and preparing data for use by others; and EPCRA Reporting Center fixed costs – rent and form storage.
Outreach and Training	Providing EPCRA technical hotline, technical guidance, industry outreach, and regional, state, and public training; and Responding to requests for information through TRI User Support.
Information Dissemination	Public access through the National Library of Medicine (NLM) database, CD-ROM, and computer diskettes.
Policy and Petitions	Analysis to support petitions, list revisions, trade secret claims, and rulemakings.

Compliance and Enforcement	Technical assistance, compliance outreach, facility inspections, issuance of cases and creation of Supplemental Environmental Projects (SEPs).

EPA measures its resource requirements in terms of the number of data elements that must be processed. A data element is a single unit of information reported on a Form R, such as facility address or the number of pounds of the chemical released to air, that is entered into the TRI Information Management System. In the 1991 reporting cycle (which EPA processed in 1993), there were about 9.6 million data elements processed. Using the FY 1993 budget and 9.6 million data elements per reporting cycle, the EPA employees (as measured by full time equivalents, or FTEs) and extramural costs associated with each category of activities were separated into a fixed component and an incremental component. The incremental component is the amount that is variable, depending on the number of data elements. By dividing the incremental component by 9.6 million data elements, the incremental component per million data elements was determined. A base level of 35.1 FTEs and $4.1 million in extramural costs are required to process the reports plus an additional 2.61 FTEs and $551,600 in extramural costs for each million data elements processed. Therefore, the number of FTEs and extramural costs can be represented by the following equations:

Number of FTEs = 35.1 FTEs + [2.61 FTEs per Million Data Elements] * [Number of Data Elements in Millions]

Extramural Cost = $4.1 million + [$551,600 Extramural Cost per Million Data Elements] * [Number of Data Elements in Millions]

The analysis assumes that half of the FTE requirement is met by EPA employees at the general pay scale grade 12 (i.e., GS-12, at a loaded salary of $78,074) and half by employees at grade 13 (i.e., GS-13, at a loaded salary of $92,843), based on a loading factor of 1.6.

A total of 122,060 Form R reports are expected to be filed.[16] Using an average of 103 data elements for each report, this is equivalent to 12.6 million data elements. The total subsequent year burden to EPA is estimated to be 136,000 hours with an annual cost of about $16.8 million. There are an estimated $400,000 in additional first-year costs that will be incurred for outreach, training, and guidance, resulting in a total first year cost for EPA of $17.2 million.

6(d) Estimating the Respondent Universe and Total Burden and Costs

Estimated Total Annual Burden for All Respondents

[16] See Section 6(a) for a discussion of this estimate.

This section presents the total annual hours burden for all respondents including both those complying with Section 313 and submitting petitions. The total hours burden for all respondents to comply with Section 313 is estimated by multiplying the per-facility burden estimate for each compliance activity by the total number of facilities performing that activity. As discussed in Section 6(a), it is estimated that 201,735 facilities must determine compliance each year, of which an average of 27,235 facilities are expected to also perform the report completion and recordkeeping activities, and 3,734 facilities are expected to complete supplier notification in addition to the other compliance activities. As a result, 174,500 facilities are estimated to complete only the compliance determination procedure. An additional 23,501 facilities are expected to complete compliance determination, form completion and recordkeeping, and 3,734 facilities are expected to complete all of the compliance steps including supplier notification. Table 9 presents the total annual hours burden for first and subsequent years. The total annual hours burden associated with Form R requirements is estimated to be approximately 6.2 million hours in the first year of the ICR, 8.3 million hours in the second year, and 7.4 million hours in the third year.

Similarly, the annual hours burden for all petitions is calculated by multiplying the per-petition burden estimate for each activity by the expected number of petitions per year. A total of 11 petitions are estimated to be filed annually. Table 10 presents the total annual hours burden for all petitions. The total annual hours burden for all petitions submitted is expected to be around 2,035 hours.

TABLE 9 - TOTAL BURDEN HOUR ESTIMATES FOR FORM R

ACTIVITY	Hours	Number of Facilities	Number of Reports	Total Burden
1ST YEAR OF THE ICR (PRIOR TO PBT REPORTING)				
Compliance Determination - all facilities	4.0	201,735	N/A	806,940
Form R Completion - existing reports	47.1	N/A	102,076	4,807,780
Recordkeeping/Mailing - existing reports	5.0	N/A	102,076	510,380
Supplier Notification	24.0	3,734	N/A	89,616
First Year Total				**6,214,716**
2ND YEAR OF THE ICR (INITIAL YEAR OF PBT REPORTING)				
Compliance Determination - all facilities	6.7	201,735	N/A	1,351,625
Rule Familiarization - facilities reporting for the first time as a result of PBT rule	34.5	3,114	N/A	107,433
Form R Completion - existing reports	47.1	N/A	102,076	4,807,780
Form R Completion - PBT reports, 1st year	69.0	N/A	19,990	1,379,310
Recordkeeping/Mailing - all reports	5.0	N/A	122,066	610,330
Supplier Notification	24.0	3,734	N/A	89,616
Second Year Total				**8,346,094**
3RD YEAR OF ICR (SUBSEQUENT YEAR OF PBT REPORTING)				
Compliance Determination - all facilities	4.7	201,735	N/A	948,155
Form R Completion - all reports	47.1	N/A	122,066	5,749,309
Recordkeeping/Mailing - all reports	5.0	N/A	122,066	610,330
Supplier Notification	24.0	3,734	N/A	89,616
Third Year Total				**7,397,410**

N/A indicates "Not Applicable"

TABLE 10 - ANNUAL HOURS BURDEN FOR ALL PETITIONS
(11 petitions per year)

Activity	Annual Hours Burden			Total Hours Burden
	Management	Technical	Clerical	
1. Read EPA Policy and Guidance	44	0	0	44
2. Plan Activities	22	11	0	33
3. Prepare Literature Search	22	77	0	99
4. Conduct Literature Search	0	528	0	528
5. Process, Review, and Focus Information	132	814	0	946
6. Write Petition	44	88	66	198
7. Review and Edit petition	44	88	22	154
8. Submit to EPA and File	0	0	33	33
Total Annual Hours Burden	308	1,606	121	2,035

Estimated Total Annual Cost for All Respondents

The total annual cost for all respondent facilities is determined by multiplying the per-facility cost estimate by the number of affected facilities for each compliance activity. Table 11 presents the annual cost for all respondents by type of facility. The total annual cost to all respondents is estimated to be $423 million in the first year, $570 million in the second year, and $504 million in the third year.

TABLE 11 - TOTAL COST ESTIMATES FOR FORM R

ACTIVITY	Cost	Number of Facilities	Number of Reports	Total Cost
1ST YEAR OF THE ICR (PRIOR TO PBT REPORTING)				
Compliance Determination - all facilities	$280	201,735	N/A	$56,485,800
Form R Completion - existing reports	$3,274	N/A	102,076	$334,196,824
Recordkeeping/Mailing - existing reports	$283	N/A	102,076	$28,887,508
Supplier Notification	$886	3,734	N/A	$3,308,324
First Year Total				**$422,878,456**
2ND YEAR OF THE ICR (INITIAL YEAR OF PBT REPORTING)				
Compliance Determination - all facilities	$469	201,735	N/A	$94,613,715
Rule Familiarization - facilities reporting for the first time as a result of PBT rule	$2,489	3,114	N/A	$7,750,746
Form R Completion - existing reports	$3,274	N/A	102,076	$334,196,824
Form R Completion - PBT reports, 1st year	$4,796	N/A	19,990	$95,872,040
Recordkeeping/Mailing - all reports	$283	N/A	122,066	$34,544,678
Supplier Notification	$886	3,734	N/A	$3,308,324
Second Year Total				**$570,286,327**
3RD YEAR OF ICR (SUBSEQUENT YEAR OF PBT REPORTING)				
Compliance Determination - all facilities	$329	201,735	N/A	$66,370,815
Form R Completion - all reports	$3,274	N/A	122,066	$399,644,084
Recordkeeping/Mailing - all reports	$283	N/A	122,066	$34,544,678
Supplier Notification	$886	3,734	N/A	$3,308,324
Third Year Total				**$503,867,901**

N/A indicates "Not Applicable"

The annual cost for all petitions is calculated by multiplying the per-petition cost for each activity by the expected number of petitions per year. A total of 11 petitions are estimated to be filed annually.

The total annual cost for all petitions submitted is shown in Table 12 and is expected to be approximately $133,000.

TABLE 12 - ANNUAL COST FOR ALL PETITIONS

Activity	Annual Cost			Total Annual Cost
	Management $86.86/hr	Technical $64.30/hr	Clerical $25.63/hr	
1. Read EPA Policy and Guidance	$3,822	$0	$0	$3,822
2. Plan Activities	$1,911	$707	$0	$2,618
3. Prepare Literature Search	$1,911	$4,951	$0	$6,862
4. Conduct Literature Search	$0	$33,950	$0	$33,950
5. Process, Review, and Focus Information	$11,466	$52,340	$0	$63,806
6. Write Petition	$3,822	$5,658	$1,692	$11,172
7. Review and Edit petition	$3,822	$5,658	$564	$10,044
8. Submit to EPA and File	$0	$0	$846	$846
Total Cost for Petitions	$26,753	$103,266	$3,101	$133,120

The previous tables have detailed the total burden and cost for complying with Section 313 and for submitting a petition independently. Table 13 presents the total burden and cost for both activities. The total burden to respondents is approximately 6.2 million hours in the first year, 8.3 million hours in the second year, and 7.4 million hours in the third year. The total cost is estimated to be about $423 million in the first year, $570 million in the second year, and $504 million in the third year.

TABLE 13 - TOTAL RESPONDENT BURDEN AND COSTS

		Annual Burden Hours	Annual Cost (millions of 1998 dollars)
1st Year	Form R	6,214,716	$422.9
	Petitions	2,035	$0.1
	Total	6,216,751	$423.0
2nd Year	Form R	8,346,094	$570.3
	Petitions	2,035	$0.1
	Total	8,348,128	$570.4

3rd Year	Form R	7,397,410	$503.9
	Petitions	2,035	$0.1
	Total	7,399,444	$504.0

For the purposes of determining the annual burden during the ICR's approval period, which EPA expects to be for 3 years, EPA has annualized the first year burden by taking the average over the 3 years. The resulting burden, as illustrated in Table 14, represents the annualized burden for this ICR. The total average annual burden to respondents is approximately 7.3 million hours and the total annual cost is estimated to be about $499 million.

TABLE 14 - ANNUALIZED BURDEN AND COST OVER THREE YEARS

	Responses	Burden	Cost
1st Year	102,076	6,216,751	$423 million
2nd Year	122,066	8,348,128	$570 million
3rd Year	122,066	7,399,444	$504 million
Annualized	115,403	7,321,441	$499 million

6(e) Reasons for Change in Burden

As a result of OMB's 02/01/99 approval of an information correction worksheet, OMB's inventory reflects 116,169 responses and 7,340,524 hours for this information collection. This ICR supporting statement is for 115,403 responses and 7,321,441 hours. The change in burden is the result of three different adjustments and a program change.

The first adjustment is to the number of responses. The 116,169 responses in the existing OMB approval was based on an assumed reporting level of 75,000 Form Rs submitted from facilities in the manufacturing sector, as well as 41,169 Form Rs as a result of the TRI industry expansion rule (which required reporting from facilities in seven non-manufacturing industry groups). There were 60,907 Form Rs submitted from the manufacturing sector in the 1997 reporting year. Therefore, the number of responses in this ICR supporting statement have been adjusted to accurately reflect reporting levels from manufacturing facilities. This adjustment results in a decrease of 14,093 responses and 734,245 burden hours.

The second adjustment is to the unit burden hours for facilities affected by the industry expansion rule. EPA estimates that the burden of complying with TRI reporting is higher in the first year than in subsequent years. The first year of reporting for these facilities (for reporting year 1998, with a reporting deadline of July 1, 1999) was covered by the previous ICR. This ICR covers subsequent year reporting, so the burden has decreased from the first year for these facilities. The adjustment for subsequent year reporting does not affect the number of responses but reduces burden by 473,224 hours.

The third adjustment is to make minor changes in the compliance determination and reporting calculations. First, this ICR updated the number of facilities that must perform compliance determination to use the most recent data from the Bureau of the Census on the number of manufacturing facilities with 10 or more employees. Second, the burden calculation is revised to reflect the average number of reports per facility. These adjustments do not affect the number of responses but increase burden by 94,584 hours.

The program change was the publication of the final rule (64 FR 58666) to lower the reporting thresholds for certain persistent bioaccumulative toxic (PBT) chemicals, expand the list of chemicals subject to reporting, and revise other reporting requirements. This change adds an average of 13,327 responses over the three years of this ICR and increases annualized reporting burden by 1,093,802 hours.

The net sum of these adjustments and program changes is a decrease of 766 responses and 19,083 burden hours from the current total. Table 15 summarizes the major program changes and adjustments that have been made over several years, as well as the changes due to the adjustments in this ICR supporting statement.

Please note that EPA submitted an ICR addendum to OMB in October, 1999 asking that the OMB inventory be changed to reflect an additional 19,990 responses and 1,485,411 hours estimated to be associated with that final rule. Since that ICR is still pending OMB approval at the time that this ICR was completed, we have included the program change related to that rule in the discussion above, adjusted to reflect the delayed applicability of the burden in the context of this ICR. If OMB approves the addendum before receiving this request, the OMB Inventory will reflect a total of 8,825,935 burden hours, as requested in the PBT Final Rule amendment to the ICR. Since this ICR adjusts the OMB Inventory to be 7,321,441 hours, the total net change in the OMB Inventory would be 1,504,494. The result change would be an adjustment.

Table 15 - CHANGES IN TRI BURDEN

Activity - Explanation	**# 1363 - Form R, etc.** (OMB #2070-0093)		**# 1704 - Form A** (OMB #2070-0143)	
	# Responses	Burden Hours	Responses	Burden Hours
1992 ICR: OMB approval of amendment to the 1990 ICR in order to include PPA requirements. In October 1992, this approval is extended by Congress, until EPA changes Form or Instructions.	112,000	4,887,680	—	—
1994 Program Change - Chemical Expansion	+14,036	+739,640	—	—
1995 Program Change - Alternate Threshold	-23,288	-1,210,976	+23,288	+803,436
1995 Program Change - Petition Delistings	-9,305	-483,860	-2,241	-77,539
1996 Program Change - Petition Delistings:	-3,081	-160,212	-533	-18,442
1996 Adjustment - Form A ICR Renewal	—	—	—	+ 2,328
1997 Adjustment - Form R ICR Renewal: Updated burden hours to reflect current estimates of burden estimated per form. OMB approval on 04/30/97 replaces Congressional approval.	—	+1,766,455	—	—
1997 Adjustment - ICR Amendments: The burden hours for the industry expansion rule (EPA #1784) were incorporated into the Form R and Form A ICRs by OMB on 06/30/97.	+39,033	+2,467,463	+7,121	+281,517
1998 Program Change: Reporting change to allow certification of multiple chemicals on a single Form A.	—	—	-14,478	-82,264
1999 Adjustment - Correction Worksheets: Revised the number of responses to be more consistent with actual reporting levels. Approved by OMB on 02/01/99.	-13,226	-665,666	-4,085	-262,161
This ICR Renewal: Adjustment to revises the number of responses from manufacturers to be more consistent with actual reporting levels, reflect subsequent year reporting costs for industry expansion facilities, and make minor changes in compliance determination and reporting calculations. Program change due to PBT rule lowering thresholds.	-766	-19,083	—	—
**TOTAL ---------->	***115,403***	***7,321,441***	***9,072***	***646,875***

6(f) Burden Statement (To appear on Collection Instrument)

The annual public burden related to the Form R, which is approved under OMB Control No. 2070-0093, is estimated to average 52.1 hours per response. According to the Paperwork Reduction Act, "burden" means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. For this collection it includes the time needed to review instructions; train personnel to be able to respond to the collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control number for this information collection appear above and on the form. In addition, the OMB control number for EPA's regulations, after initial display in the final rule, are listed in 40 CFR part 9. Send comments on the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division (CSD), Office of Environmental Information (OEI), U.S. Environmental Protection Agency (Mail Code 2822), 401 M Street, S.W., Washington, D.C. 20460. Include the OMB control number in any correspondence, but do not submit the requested information to this address. The completed forms should be submitted in accordance with the instructions accompanying the form, or as specified in the corresponding regulation.

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December 11, 1999

ATTACHMENT A

Toxic Chemical Release Inventory Reporting Form and Instructions
EPA Form 9350-1 (Rev. 04/97)

(Note: An electronic copy of this attachment is not available. Please contact the Environmental Protection Agency at the address noted in the Federal Register notice for a complete copy of this ICR.)

ATTACHMENT B
TRI CHEMICALS REPORTED TO NON-TRI DATABASES

The first two tables in this attachment compare chemical coverage between TRI and three media-specific databases: AFS (AIRS Facility Subsystem), BRS (Biennial Reporting System), and PCS (Permit Compliance System). These three databases were chosen for analysis because they contain media-specific chemical release information. The third attachment discusses the accessibility of the data in each of these sources.

The chemicals currently in TRI are listed in Attachment B-1, while the TRI chemical categories are listed in Attachment B-2. For each TRI chemical or category, there is a table entry which contains its name as listed in TRI, its CAS number or TRI-assigned category number, and indicators as to whether or not that particular TRI chemical is tracked by AFS, BRS, and/or PCS. A dot in the AFS, BRS, or PCS columns indicates that the chemical listed at that row is either tracked by that database or is speciable using data from that database. While a dot means that the particular chemical is tracked by both TRI and the database in question, it does not necessarily mean that a facility releasing the chemical reports that specific chemical to both systems. In other words, the same facility may not be reporting the same information to different programs. Therefore, the indication that a chemical is tracked in both systems does not mean the information contained in the systems is equivalent.

AFS matches are based on emissions data "speciated" from limited industry profiles, and are not derived from directly reported data. Speciated chemical emissions are estimated using SPECIATE and are based on actual reported PM-10 and VOC emissions. Please see section 5(a) of this supporting statement for a description of SPECIATE.

Because data categorized by BRS waste codes can be only partially translated into chemical-specific information, chemicals have been tagged in the table as reporting to BRS only where there is CAS-specific data that can be matched. Other wastestreams may contain additional TRI chemicals, but because their waste codes are not CAS-specific, it is difficult to determine which chemicals (as well as how much of them) are actually in the wastestream.

PCS chemicals are tagged in the table if at least one PCS facility reports the chemical as part of its Discharge Monitoring Report (DMR). Therefore, because a chemical is tagged does not necessarily mean that it is significantly represented in PCS. In addition, because the list of chemicals a facility reports depends heavily on the language of the permit, facilities releasing identical chemicals may not be required to report the same set of chemicals to PCS.

Attachment B-1

TRI Listed Chemicals Directly Reporting to AFS, BRS, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**BRS**	**PCS**
1,1,1,2-Tetrachloro-2-fluoroethane (HCFC-121a)	354110			
1,1,1,2-Tetrachloroethane	630206		!	
1,1,1-Trichloroethane	71556	!	!	!
1,1,2,2-Tetrachloro-1-fluoroethane (HCFC-121)	354143			
1,1,2,2-Tetrachloroethane	79345		!	!
1,1,2-Trichloroethane	79005	!	!	!
1,1-Dichloro-1,2,2,3,3-pentafluoropropane (HCFC-225cc)	13474889			
1,1-Dichloro-1,2,2-trifluoroethane (HCFC-123b)	812044			
1,1-Dichloro-1,2,3,3,3-pentafluoropropane (HCFC-225eb)	111512562			
1,1-Dichloro-1-fluoroethane (HCFC-141b)	1717006			
1,1-Dimethyl hydrazine	57147		!	
1,2,3-Trichloropropane	96184			
1,2,4-Trichlorobenzene	120821			!
1,2,4-Trimethylbenzene	95636	!		!
1,2-Butylene oxide	106887			
1,2-Dibromo-3-chloropropane	96128		!	
1,2-Dibromoethane	106934	!	!	!
1,2-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225bb)	422446			
1,2-Dichloro-1,1,2-trifluoroethane (HCFC-123a)	354234			
1,2-Dichloro-1,1,3,3,3-pentafluoropropane (HCFC-225da)	431867			
1,2-Dichloro-1,1-difluoroethane (HCFC-132b)	1649087			
1,2-Dichlorobenzene	95501	!	!	!
1,2-Dichloroethane	107062	!	!	!
1,2-Dichloroethylene	540590			
1,2-Dichloropropane	78875		!	!
1,2-Diphenylhydrazine	122667		!	!
1,2-Phenylenediamine	95545			
1,2-Phenylenediamine dihydrochloride	615281			

TRI Listed Chemicals Directly Reporting to AFS, BRS, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**BRS**	**PCS**
1,3-Butadiene	106990	!		
1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb)	507551			
1,3-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225ea)	136013791			
1,3-Dichlorobenzene	541731	!	!	!
1,3-Dichloropropylene	542756		!	!
1,3-Phenylenediamine	108452			
1,4-Dichloro-2-butene	764410		!	!
1,4-Dichlorobenzene	106467	!	!	!
1,4-Dioxane	123911		!	!
1,4-Phenylenediamine dihydrochloride	624180			
1-(3-Chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride	4080313			
1-Amino-2-methylanthraquinone	82280			
1-Bromo-1-(bromomethyl)-1,3-propanedicarbonitrile	35691657			
1-Chloro-1,1,2,2-tetrafluoroethane (HCFC-124a)	354256			
1-Chloro-1,1-difluoroethane (HCFC-142b)	75683			
2,2-Dibromo-3-nitrilopropionamide	10222012			
2,2-Dichloro-1,1,1,3,3-pentafluoropropane (HCFC-225aa)	128903219			
2,2-Dichloro-1,1,1-trifluoroethane (HCFC-123)	306832			
2,3,5-Trimethylphenyl methylcarbamate	2655154			
2,3-Dichloro-1,1,1,2,3-pentafluoropropane (HCFC-225ba)	422480			
2,3-Dichloropropene	78886			
2,4,5-Trichlorophenol	95954			!
2,4,6-Trichlorophenol	88062			!
2,4-D	94757		!	!
2,4-D 2-ethyl-4-methylpentyl ester	53404378			
2,4-D 2-ethylhexyl ester	1928434			
2,4-D butoxyethyl ester	1929733			
2,4-D butyl ester	94804			
2,4-D chlorocrotyl ester	2971382			
2,4-D isopropyl ester	94111			
2,4-D propylene glycol butyl ether ester	1320189			
2,4-D sodium salt	2702729			

TRI Listed Chemicals Directly Reporting to AFS, BRS, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**BRS**	**PCS**
2,4-DB	94826			
2,4-Diaminoanisole	615054			
2,4-Diaminoanisole sulfate	39156417			
2,4-Diaminotoluene	95807			!
2,4-Dichlorophenol	120832		!	!
2,4-Dimethylphenol	105679		!	!
2,4-Dinitrophenol	51285		!	!
2,4-Dinitrotoluene	121142		!	!
2,4-Dithiobiuret	541537		!	
2,4-DP (Dichlorprop)	120365			!
2,6-Dimethylphenol	576261			
2,6-Dinitrotoluene	606202		!	!
2,6-Xylidine	87627			
2-Acetylaminofluorene	53963		!	
2-Aminoanthraquinone	117793			
2-Bromo-2-nitropropane-1,3-diol (Bronopol)	52517			
2-Chloro-1,1,1,2-tetrafluoroethane (HCFC-124)	2837890			
2-Chloro-1,1,1-trifluoroethane (HCFC-133a)	75887			
2-Chloroacetophenone	532274			
2-Ethoxyethanol	110805	!	!	
2-Mercaptobenzothiazole (MBT)	149304			
2-Methoxyethanol	109864	!		
2-Methyllactonitrile	75865		!	
2-Methylpyridine	109068		!	
2-Nitrophenol	88755			!
2-Nitropropane	79469		!	
2-Phenylphenol	90437	!		
3,3'-Dichlorobenzidine	91941		!	!
3,3'-Dichlorobenzidine dihydrochloride	612839			
3,3'-Dichlorobenzidine sulfate	64969342			
3,3'-Dimethoxybenzidene dihydrochloride (o-Dianisidine dihyd	20325400			

TRI Listed Chemicals Directly Reporting to AFS, BRS, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**BRS**	**PCS**
3,3'-Dimethoxybenzidine	119904		!	
3,3'-Dimethoxybenzidine hydrochloride (o-Dianisidine hydroch	111984099			
3,3'-Dimethylbenzidine	119937		!	
3,3'-Dimethylbenzidine dihydrochloride (o-Tolidine dihydroch	612828			
3,3'-Dimethylbenzidine dihydrofluoride (o-Tolidine dihydrofl	41766750			
3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca)	422560			
3,4-Dichloropentafluoropropane	127564925			
3-Chloro-1,1,1-trifluoropropane (HCFC-253fb)	460355			
3-Chloro-2-methyl-1-propene	563473			
3-Chloropropionitrile	542767		!	
3-Iodo-2-propynyl butylcarbamate	55406536			
4,4'-Diaminodiphenyl ether	101804			
4,4'-Isopropylidenediphenol	80057			!
4,4'-Methylenebis(2-chloroaniline)	101144		!	
4,4'-Methylenebis(N,N-dimethyl)benzenamine	101611			
4,4'-Methylenedianiline	101779	!		
4,4'-Thiodianiline	139651			
4,6-Dinitro-o-cresol	534521		!	!
4-Aminoazobenzene	60093			
4-Aminobiphenyl	92671			
4-Dimethylaminoazobenzene	60117		!	
4-Nitrobiphenyl	92933			
4-Nitrophenol	100027		!	!
5-Nitro-o-anisidine	99592			
5-Nitro-o-toluidine	99558		!	
Abamectin	71751412			
Acephate	30560191			
Acetaldehyde	75070	!	!	
Acetamide	60355			

TRI Listed Chemicals Directly Reporting to AFS, BRS, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**BRS**	**PCS**
Acetonitrile	75058		!	!
Acetophenone	98862		!	!
Acifluorfen sodium salt	62476599			
Acrolein	107028	!	!	!
Acrylamide	79061		!	
Acrylic acid	79107	!	!	
Acrylonitrile	107131	!	!	!
Alachlor	15972608			!
Aldicarb	116063		!	!
Aldrin	309002		!	!
Allyl alcohol	107186		!	
Allyl chloride	107051			!
Allylamine	107119			
alpha-Hexachlorocyclohexane	319846			!
alpha-Naphthylamine	134327		!	
Aluminum (fume or dust)	7429905	!		!
Aluminum oxide (fibrous forms)	1344281			
Aluminum phosphide	20859738		!	
Ametryn	834128			
Amitraz	33089611			
Amitrole	61825		!	
Ammonia	7664417	!		!
Anilazine	101053			
Aniline	62533	!	!	!
Anthracene	120127	!		!
Antimony	7440360	!		!
Arsenic	7440382	!		!
Asbestos (friable)	1332214			!
Atrazine	1912249			
Barium	7440393	!		!
Bendiocarb	22781233			
Benfluralin	1861401			

TRI Listed Chemicals Directly Reporting to AFS, BRS, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**BRS**	**PCS**
Benomyl	17804352			
Benzal chloride	98873		!	
Benzamide	55210			
Benzene	71432	!	!	!
Benzidine	92875		!	!
Benzoic trichloride	98077		!	
Benzoyl chloride	98884			
Benzoyl peroxide	94360			
Benzyl chloride	100447	!	!	
Beryllium	7440417	!	!	!
beta-Naphthylamine	91598		!	
beta-Propiolactone	57578			
Bifenthrin	82657043			
Biphenyl	92524	!		
Bis(2-chloro-1-methylethyl)ether	108601		!	!
Bis(2-chloroethoxy) methane	111911		!	!
Bis(2-chloroethyl) ether	111444		!	!
Bis(chloromethyl) ether	542881		!	!
Bis(tributyltin) oxide	56359			
Boron trichloride	10294345			
Boron trifluoride	7637072			
Bromacil	314409			
Bromacil lithium salt	53404196			
Bromine	7726956	!		
Bromochlorodifluoromethane {Halon 1211}	353593			
Bromoform	75252		!	!
Bromomethane	74839		!	!
Bromotrifluoromethane {Halon 1301}	75638			
Bromoxynil	1689845			
Bromoxynil octanoate	1689992			
Brucine	357573		!	
Butyl acrylate	141322	!		

TRI Listed Chemicals Directly Reporting to AFS, BRS, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**BRS**	**PCS**
Butyraldehyde	123728	!		
C.I. Acid Green 3	4680788			
C.I. Acid Red 114	6459945			
C.I. Basic Green 4	569642			
C.I. Basic Red 1	989388			
C.I. Direct Black 38	1937377			
C.I. Direct Blue 218	28407376			
C.I. Direct Blue 6	2602462			
C.I. Direct Brown 95	16071866			
C.I. Disperse Yellow 3	2832408			
C.I. Food Red 15	81889			
C.I. Food Red 5	3761533			
C.I. Solvent Orange 7	3118976			
C.I. Solvent Yellow 14	842079			
C.I. Solvent Yellow 3	97563			
C.I. Solvent Yellow 34	492808		!	
C.I. Vat Yellow 4	128665			
Cadmium	7440439	!		!
Calcium cyanamide	156627			
Captan	133062			
Carbaryl	63252			
Carbofuran	1563662			!
Carbon disulfide	75150	!	!	!
Carbon tetrachloride	56235	!	!	!
Carbonyl sulfide	463581			
Carboxin	5234684			
Catechol	120809			
Chinomethionat	2439012			
Chloramben	133904			
Chlordane	57749		!	!
Chlorendic acid	115286			!
Chlorimuron ethyl	90982324			

TRI Listed Chemicals Directly Reporting to AFS, BRS, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**BRS**	**PCS**
Chlorine	7782505	!		!
Chlorine dioxide	10049044			
Chloroacetic acid	79118			
Chlorobenzene	108907	!	!	!
Chlorobenzilate	510156			
Chlorodifluoromethane (HCFC-22)	75456	!		!
Chloroethane	75003	!		!
Chloroform	67663	!	!	!
Chloromethane	74873	!	!	!
Chloromethyl methyl ether	107302		!	
Chloropicrin	76062			
Chloroprene	126998	!		
Chlorotetrafluoroethane	63938103			
Chlorothalonil	1897456			!
Chlorotrifluoromethane (CFC-13)	75729	!		
Chlorpyrifos methyl	5598130			
Chlorsulfuron	64902723			
Chromium	7440473	!		!
Cobalt	7440484	!		!
Copper	7440508	!		!
Creosote	8001589	!	!	
Cresol (mixed isomers)	1319773	!	!	!
Crotonaldehyde	4170303		!	
Cumene	98828	!	!	!
Cumene hydroperoxide	80159		!	
Cupferron	135206			
Cyanazine	21725462			
Cycloate	1134232			
Cyclohexane	110827	!	!	!
Cyclohexanol	108930			
Cyfluthrin	68359375			
Cyhalothrin	68085858			

TRI Listed Chemicals Directly Reporting to AFS, BRS, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**BRS**	**PCS**
d-trans-Allethrin	28057489			
Dazomet	533744			
Dazomet sodium salt	53404607			
Decabromodiphenyl oxide	1163195			
Desmedipham	13684565			
Di(2-ethylhexyl) phthalate	117817		!	!
Diallate	2303164		!	
Diaminotoluene (mixed isomers)	25376458		!	
Diazinon	333415			!
Diazomethane	334883			
Dibenzofuran	132649			
Dibromotetrafluoroethane {Halon 2402}	124732			
Dibutyl phthalate	84742	!	!	!
Dicamba (3,6-Dichloro-2-methyoxybenzoic acid)	1918009			
Dichloran (2,6-Dichloro-4-nitroaniline)	99309			
Dichloro-1,1,2-trifluoroethane	90454185			
Dichlorobenzene (mixed isomers)	25321226			!
Dichlorobromomethane	75274			!
Dichlorodifluoromethane (CFC-12)	75718	!	!	!
Dichlorofluoromethane (HCFC-21)	75434			
Dichloromethane	75092	!	!	!
Dichlorophene (2,2'-Methylenebis(4-chlorophenol)	97234			
Dichlorotetrafluoroethane (CFC-114)	76142	!		
Dichlorotrifluoroethane	34077877			
Dichlorvos	62737			
Diclofop methyl	51338273			
Dicofol	115322			
Dicyclopentadiene	77736			
Diepoxybutane	1464535			
Diethanolamine	111422			
Diethatyl ethyl	38727558			
Diethyl sulfate	64675			

TRI Listed Chemicals Directly Reporting to AFS, BRS, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**BRS**	**PCS**
Diflubenzuron	35367385			
Diglycidyl resorcinol ether	101906			
Dihydrosafrole	94586			
Dimethipin	55290647			
Dimethoate	60515		!	
Dimethyl chlorothiophosphate	2524030			
Dimethyl phthalate	131113	!	!	!
Dimethyl sulfate	77781		!	
Dimethylamine	124403		!	
Dimethylamine dicamba	2300665			
Dimethylcarbamyl chloride	79447		!	
Dimethyldichlorosilane	75785			
Dinitrobutyl phenol (Dinoseb)	88857		!	!
Dinitrotoluene (mixed isomers)	25321146			
Dinocap	39300453			
Diphenamid	957517			
Diphenylamine	122394			
Dipotassium endothall	2164070			
Dipropyl isocinchomeronate	136458			
Disodium cyanodithioimidocarbonate	138932			
Diuron	330541			
Dodine (Dodecylguanidine monoacetate)	2439103			
Epichlorohydrin	106898	!	!	!
Ethoprop	13194484			
Ethyl acrylate	140885	!	!	
Ethyl chloroformate	541413			
Ethyl dipropylthiocarbamate (EPTC)	759944			
Ethylbenzene	100414	!		!
Ethylene	74851	!		
Ethylene glycol	107211	!		!
Ethylene oxide	75218	!	!	
Ethylene thiourea	96457		!	

TRI Listed Chemicals Directly Reporting to AFS, BRS, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**BRS**	**PCS**
Ethyleneimine	151564		!	
Ethylidene dichloride	75343		!	!
Famphur	52857		!	
Fenarimol	60168889			
Fenbutatin oxide	13356086			
Fenoxaprop ethyl	66441234			
Fenoxycarb	72490018			
Fenpropathrin	39515418			
Fenthion	55389			
Fenvalerate	51630581			
Ferbam	14484641			
Fluazifop butyl	69806504			
Fluometuron	2164172			
Fluorine	7782414	!	!	
Fluorouracil (5-Fluorouracil)	51218			
Fluvalinate	69409945			
Folpet	133073			
Fomesafen	72178020			
Formaldehyde	50000	!	!	!
Formic acid	64186	!	!	
Freon 113	76131	!		!
Heptachlor	76448		!	!
Hexachloro-1,3-butadiene	87683		!	!
Hexachlorobenzene	118741		!	!
Hexachlorocyclopentadiene	77474		!	!
Hexachloroethane	67721		!	!
Hexachloronaphthalene	1335871			
Hexachlorophene	70304		!	
Hexamethylphosphoramide	680319			!
Hexazinone	51235042			
Hydramethylnon	67485294			
Hydrazine	302012		!	!

TRI Listed Chemicals Directly Reporting to AFS, BRS, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**BRS**	**PCS**
Hydrazine sulfate	10034932			
Hydrochloric acid	7647010			
Hydrogen cyanide	74908		!	
Hydrogen fluoride	7664393		!	
Hydrogen sulfide	7783064	!	!	!
Hydroquinone	123319			!
Imazalil	35554440			
Iron pentacarbonyl	13463406			
Isobutyraldehyde	78842	!		
Isodrin	465736		!	
Isofenphos	25311711			
Isopropyl alcohol (manufacturing-strong acid process)	67630	!		!
Isosafrole	120581		!	
Lactofen	77501634			
Lead	7439921	!		!
Lindane	58899		!	!
Linuron	330552			
Lithium carbonate	554132			
m-Cresol	108394			
m-Dinitrobenzene	99650			
m-Xylene	108383	!		
Malathion	121755			!
Maleic anhydride	108316	!	!	
Malononitrile	109773		!	
Maneb	12427382			
Manganese	7439965	!		!
Mecoprop	93652			
Mercury	7439976	!		!
Merphos	150505			
Methacrylonitrile	126987		!	
Metham sodium (Sodium methyldithiocarbamate)	137428			
Methanol	67561	!	!	

TRI Listed Chemicals Directly Reporting to AFS, BRS, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**BRS**	**PCS**
Methazole	20354261			
Methiocarb	2032657			
Methoxone	94746			
Methoxone sodium salt	3653483			
Methoxychlor	72435		!	!
Methyl acrylate	96333	!		
Methyl chlorocarbonate	79221		!	
Methyl ethyl ketone	78933	!	!	!
Methyl hydrazine	60344		!	
Methyl iodide	74884		!	
Methyl isobutyl ketone	108101	!	!	!
Methyl isocyanate	624839		!	
Methyl isothiocyanate	556616			
Methyl mercaptan	74931		!	
Methyl methacrylate	80626	!	!	!
Methyl parathion	298000		!	
Methyl tert-butyl ether	1634044			
Methylene bromide	74953	!	!	
Methyltrichlorosilane	75796			
Metiram	9006422			!
Metribuzin	21087649			
Mevinphos	7786347			
Michler's ketone	90948			
Molinate	2212671			
Molybdenum trioxide	1313275			
Monochloropentafluoroethane {CFC-115}	76153	!		
Monuron	150685			
Mustard gas	505602			
Myclobutanil	88671890			
N,N-Dimethylaniline	121697			!
N,N-Dimethylformamide	68122	!		
n-Butyl alcohol	71363	!	!	

TRI Listed Chemicals Directly Reporting to AFS, BRS, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**BRS**	**PCS**
n-Hexane	110543	!		
N-Methyl-2-pyrrolidone	872504			
N-Methylolacrylamide	924425			
N-Nitroso-N-ethylurea	759739		!	
N-Nitroso-N-methylurea	684935		!	
N-Nitrosodi-n-butylamine	924163		!	
N-Nitrosodi-n-propylamine	621647		!	!
N-Nitrosodiethylamine	55185		!	
N-Nitrosodimethylamine	62759		!	!
N-Nitrosodiphenylamine	86306			!
N-Nitrosomethylvinylamine	4549400			
N-Nitrosomorpholine	59892			
N-Nitrosonornicotine	16543558			
N-Nitrosopiperidine	100754			
Nabam	142596			
Naled	300765			
Naphthalene	91203	!	!	!
Nickel	7440020	!		!
Nitrapyrin	1929824			
Nitric acid	7697372			
Nitrilotriacetic acid	139139			
Nitrobenzene	98953	!	!	!
Nitrofen	1836755			
Nitrogen mustard	51752			
Nitroglycerin	55630		!	!
Norflurazon	27314132			
Octachloronaphthalene	2234131			
ortho-Anisidine	90040			
ortho-Anisidine hydrochloride	134292			
ortho-Cresol	95487			
ortho-Dinitrobenzene	528290			
ortho-Toluidine	95534		!	

TRI Listed Chemicals Directly Reporting to AFS, BRS, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**BRS**	**PCS**
ortho-Toluidine hydrochloride	636215		!	
ortho-Xylene	95476	!		
Oryzalin	19044883			
Osmium tetroxide	20816120		!	
Oxydemeton methyl	301122			
Oxydiazon	19666309			
Oxyfluorfen	42874033			
Ozone	10028156			
p-Anisidine	104949			
p-Chloro-o-toluidine	95692			
p-Chloroaniline	106478		!	
p-Chlorophenyl isocyanate	104121			
p-Cresidine	120718			
p-Cresol	106445			!
p-Dinitrobenzene	100254			
p-Nitroaniline	100016		!	
p-Nitrosodiphenylamine	156105			
p-Phenylenediamine	106503			
p-Xylene	106423	!		
Paraldehyde	123637		!	
Paraquat dichloride	1910425			
Parathion	56382		!	!
Pebulate	1114712			
Pendimethalin	40487421			
Pentachloroethane	76017		!	
Pentachlorophenol	87865			!
Pentobarbital sodium	57330			
Peracetic acid	79210			
Perchloromethyl mercaptan	594423			
Permethrin	52645531			
Phenanthrene	85018	!		!
Phenol	108952	!	!	!

TRI Listed Chemicals Directly Reporting to AFS, BRS, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**BRS**	**PCS**
Phenothrin	26002802			
Phenytoin	57410			
Phosgene	75445		!	
Phosphine	7803512		!	
Phosphoric acid	7664382			
Phosphorus (yellow or white)	7723140	!		!
Phthalic anhydride	85449	!	!	
Picloram	1918021			
Picric acid	88891			
Piperonyl butoxide	51036			
Pirimiphos methyl	29232937			
Polychlorinated biphenyls	1336363			
Potassium bromate	7758012			
Potassium dimethyldithiocarbamate	128030			
Potassium N-methyldithiocarbamate	137417			
Profenofos	41198087	`		
Prometryn	7287196			
Pronamide	23950585		!	
Propachlor	1918167			!
Propane sultone	1120714		!	
Propanil	709988			
Propargite	2312358			
Propargyl alcohol	107197		!	
Propetamphos	31218834			
Propiconazole	60207901			
Propionaldehyde	123386	!		
Propoxur	114261			
Propylene (Propene)	115071	!		
Propylene oxide	75569	!		
Propyleneimine	75558		!	
Pyridine	110861		!	!
Quinoline	91225			

TRI Listed Chemicals Directly Reporting to AFS, BRS, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**BRS**	**PCS**
Quinone	106514		!	
Quintozene	82688		!	
Quizalofop-ethyl	76578148			
Resmethrin	10453868			
S,S,S-Tributyltrithiophosphate (DEF)	78488			
Saccharin (manufacturing)	81072		!	
Safrole	94597			
sec-Butyl alcohol	78922	!		
Selenium	7782492	!		!
Sethoxydim	74051802			
Silver	7440224	!		!
Simazine	122349			
Sodium azide	26628228		!	
Sodium dicamba	1982690			
Sodium dimethyldithiocarbamate	128041			
Sodium fluoroacetate	62748		!	
Sodium nitrite	7632000			!
Sodium o-phenylphenoxide	132274			
Sodium pentachlorophenate	131522			
Styrene	100425	!		!
Styrene oxide	96093			
Sulfuric acid	7664939			
Sulfuryl fluoride (Vikane)	2699798			
Sulprofos	35400432			
Tebuthiuron	34014181			
Temephos	3383968			
Terbacil	5902512			
tert-Butyl alcohol	75650	!		
Tetrachloroethylene	127184	!	!	!
Tetrachlorvinphos	961115			
Tetracycline hydrochloride	64755			
Tetramethrin	7696120			

TRI Listed Chemicals Directly Reporting to AFS, BRS, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**BRS**	**PCS**
Thallium	7440280			!
Thiabendazole	148798			
Thioacetamide	62555		!	
Thiobencarb	28249776			
Thiodicarb	59669260			
Thiophanate ethyl	23564069			
Thiophanate-methyl	23564058			
Thiosemicarbazide	79196		!	
Thiourea	62566		!	
Thiram	137268		!	
Thorium dioxide	1314201			
Titanium tetrachloride	7550450			
Toluene	108883	!	!	!
Toluene-2,4-diisocyanate	584849			
Toluene-2,6-diisocyanate	91087			
Toluenediisocyanate (mixed isomers)	26471625		!	
Toxaphene	8001352		!	!
trans-1,3-Dichloropropene	10061026			!
trans-1,4-Dichloro-2-butene	110576			
Triadimefon	43121433			
Triallate	2303175			
Triaziquone	68768			
Tribenuron methyl	101200480			
Tributyltin fluoride	1983104			
Tributyltin methacrylate	2155706			
Trichlorfon	52686			
Trichloroacetyl chloride	76028			
Trichloroethylene	79016	!	!	!
Trichlorofluoromethane {CFC-11}	75694	!	!	!
Triclopyr triethylammonium salt	57213691			
Triethylamine	121448			
Trifluralin	1582098			

TRI Listed Chemicals Directly Reporting to AFS, BRS, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**BRS**	**PCS**
Triforine	26644462			
Trimethylchlorosilane	75774			
Triphenyltin chloride	639587			
Triphenyltin hydroxide	76879			
Tris(2,3-dibromopropyl) phosphate	126727		!	
Trypan blue	72571		!	
Urethane	51796		!	
Vanadium (fume or dust)	7440622	!		!
Vinclozolin	50471448			
Vinyl acetate	108054	!		!
Vinyl bromide	593602			
Vinyl chloride	75014	!	!	!
Vinylidene chloride	75354		!	!
Xylene (mixed isomers)	1330207	!	!	!
Zinc (fume or dust)	7440666	!		!
Zineb	12122677			
Source: *Economic Analysis of the Final Rule to Add Certain Industry Groups to EPCRA Section 313*				

Attachment B-2

TRI Listed Chemical Categories Directly Reporting to AFS, BRS, and/or PCS				
Chemical Category/Constituent	**CAS Number/TRI Reference**	**AFS**	**BRS**	**PCS**
Antimony Compounds	N010			
Arsenic Compounds	N020			
Barium Compounds	N040			
Beryllium Compounds	N050			
Cadmium Compounds	N078			
Chlorophenols	N084			
Chromium Compounds	N090			
Cobalt Compounds	N096			
Copper Compounds	N100			
Cyanide Compounds	N106			
Diisocyanates	N120			
1,3-Bis(methylisocyanate)-cyclohexane	38861722			
1,4-Bis(methylisocyanate)-cyclohexane	10347543			
1,4-Cyclohexane diisocyanate	25563671			
Diethyldiisocyanatobenzene	134190377			
4,4'-Diisocyanatodiphenyl ether	41287384			
2,4'-Diisocyanatodiphenyl sulfide	757908732			
3,3'-Dimethoxybenzidine-4,4'-diisocyanate	91930			
3,3'-Dimethyl-4,4'-diphenylene diisocyanate	91974			
3,3'-Dimethyldiphenylmethane-4,4'-diisocyanate	139253			
Hexamethylene-1,6-diisocyanate	822060			
Isophorone diisocyanate	4098719			
4-Methyldiphenylmethane-3,4-diisocyanate	75790840			
1,1-Methylene bis(4-isocyanatocyclohexane)	5124301			
Methylene bis(phenylisocyanate) (MDI)	101688			
1,5-Naphthalene diisocyanate	3173726			
1,3-Phenylene diisocyanate	123615			
1,4-Phenylene diisocyanate	104494			
Polymeric diphenylmethane diisocyanate	9016879			

TRI Listed Chemical Categories Directly Reporting to AFS, BRS, and/or PCS				
Chemical Category/Constituent	**CAS Number/TRI Reference**	**AFS**	**BRS**	**PCS**
2,2,4-Trimethylhexamethylene diisocyanate	16938220			
2,4,4-Trimethylhexamethylene diisocyanate	15646965			
Ethylenebisdithiocarbamic acid, salts and esters	N171			
Glycol Ethers	N230			
Lead Compounds	N420			
Manganese Compounds	N450			
Mercury Compounds	N458			
Nickel Compounds	N495			
Nicotine and salts	N503			
Nitrate compounds (water dissociable)	N511			!
Polybrominated Biphenyls (PBBs)	N575			
Polychlorinated alkanes	N583			
Polycyclic aromatic compounds (following chemicals only) *	N590			
Benz(a)anthracene	56553	!	!	!
Benzo(a)phenanthrene	218019		!	!
Benzo(a)pyrene	50328	!	!	!
Benzo(b)fluoranthene	205992	!		!
Benzo(j)fluoranthene	205823			
Benzo(k)fluoranthene	207089	!		!
Benzo(rst)pentaphene	189559		!	
Dibenz(a,h)acridine	226368			
Dibenz(a,j)acridine	224420			
Dibenzo(a,h)anthracene	53703		!	!
Dibenzo(a,e)fluoranthene	5385751			
Dibenzo(a,e)pyrene	192654			
Dibenzo(a,h)pyrene	189640			
Dibenzo(a,l)pyrene	191300			
7H-Dibenzo(c,g)carbazole	194592			
7,12-Dimethylbenz(a)anthracene	57976		!	
Indeno[1,2,3-cd]pyrene	193395			
5-Methylchrysene	3697243	!	!	!

TRI Listed Chemical Categories Directly Reporting to AFS, BRS, and/or PCS				
Chemical Category/Constituent	**CAS Number/TRI Reference**	**AFS**	**BRS**	**PCS**
1-Nitropyrene	5522430			
Selenium Compounds	N725			
Silver Compounds	N740			
Strychnine and salts	N746			
Thallium Compounds	N760			
Warfarin and salts	N874			
Zinc Compounds	N982			
Source: Source: *Economic Analysis of the Final Rule to Add Certain Industry Groups to EPCRA Section 313*				

ATTACHMENT B-3
PUBLIC ACCESS TO EPA DATABASES

This section describes some of the various avenues of access available to public users of TRI and other databases. Electronic as well as conventional information sources are included in the discussion.

TOXICS RELEASE INVENTORY (TRI)

EPA has spent considerable effort and resources to make TRI available to the public. The various methods through which a concerned citizen can access TRI include:

On-Line Resources

Internet access to TRI data is available from the EPA World Wide Web (WWW) server at http://www.epa.gov/, through the ENVIROFACTS system (described below). The Right-to-Know Computer Network (RTK NET) provides free public access to TRI as well as several other environmental and governmental databases (and is also described below). The National Library of Medicine (NLM) TOXNET System is an on-line system offering on-line searching of the TRI database. TOXNET was designed to be easy to use by persons with limited computer experience, and can be reached via either dial-up or Internet.

Electronic media

The TRI CD-ROM contains the complete national TRI, starting with the first inventory in 1987. Chemical Fact Sheets (formerly TRI-FACTS) containing reference material on the health and ecological effects of the regulated substances are also available on the same CD-ROM. Contact/Availability: NTIS, Government Printing Office (GPO), EPA National Service Center for Environmental Publications (NSCEP), Federal Depository Libraries, EPA Regional Offices.

The NESE-DB (National Economics, Social and Environmental Data Bank) CD-ROM includes the TRI state data and the national public data file on CD-ROM. The disc is produced quarterly by the Department of Commerce and provides access to socio-economic as well as environmental statistics and information. The data are gathered from over 15 federal agencies. Contact/Availability: Department of Commerce, selected federal depository libraries.

Diskettes: Requesters can select diskettes by state or for the entire US in DBASE III format. Diskettes are accompanied by documentation. Contact/Availability: GPO, EPA Internet site.

Printed media

TRI Reports: EPA assembles several detailed annual reports providing summaries, analyses, and comparison of TRI data by year. The reports summarize data on total releases and transfers of TRI chemicals; geographic distribution of TRI releases and transfers; industrial patterns of releases and transfers; the interstate and intrastate transport of wastes and other kinds of analyses. Contact: EPCRA Information Hotline, NSCP, EPA Internet site.

OTHER ENVIRONMENTAL DATABASES

On-Line Resources

The Environmental Protection Agency (EPA) created the Envirofacts Warehouse (http://www.epa.gov/enviro/index_java.html) to provide the public with direct access to the Agency's databases. The Envirofacts Warehouse allows users to retrieve environmental information from EPA databases on Air, Chemicals, Facility Information, Grants/Funding, Hazardous Waste, Spatial Data, Superfund, Toxic Releases, and Water Permits and Drinking Water. Users may retrieve information from several databases at once, or from one database at a time. They may use online queries to retrieve data from these sources and create reports, or generate maps of environmental information by selecting from several mapping applications available through EPA's Maps On Demand.

ENVIROFACTS is a relational database that integrates data from several major EPA program systems, as well as the Facility Indexing System (FINDS) and the ENVIROFACTS Master Chemical Integrator (ECMI), which is a cross reference index of chemical data reported in the program systems. ENVIROFACTS allows the user to perform queries that integrate facility data from the multiple databases based on their FINDS IDs.[17] ENVIROFACTS includes monthly-updated data available under the Freedom of Information Act. No enforcement or budget-sensitive information is contained in ENVIROFACTS. Databases include:

AFS
BRS
PCS

[17] See Section 5(a) of this supporting statement for a more detailed discussion of FINDS.

CERCLIS[18]
TRIS
RCRIS[19]
SDWIS[20]
FINDS
ENVIROFACTS Master Chemical Integrator (EMCI)

In addition to ENVIROFACTS, The EPA World Wide Web (WWW) site provides access to other release and transfer databases, including:

AIRS Executive: AIRS Executive is a software package designed for easy access and presentation of some of the most frequently used data in AIRS. The whole software package and the monthly data updates are downloadable from the EPA WWW site (http://www.epa.gov/airs/aexec.html). However, it does not contain the extensive air pollution data found in AIRS proper, which is available on the EPA mainframe.

BRS Hazardous Waste Reports and Data Files: The BRS data is contained in self-extracting zipped flat files and are also downloadable from the EPA WWW site. At the time of this writing, the most current version of the report is based on the 1997 BRS data, and can be accessed at http://www.epa.gov/docs/OSWRCRA/hazwaste/data/. The data files themselves are also available on the WWW site, although expanding a year's worth of BRS data requires over 200 MB of disk space. In addition, a software package such as SAS is necessary for manageable data manipulation. Hard copies of the National Biennial RCRA Hazardous Waste Report are also available from NTIS.

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[18] CERCLIS, or the Comprehensive Environmental Response Compensation and Liability Information System, tracks information collected under CERCLA. CERCLIS contains Superfund data on hazardous waste site assessment and remediation, including data on active sites from point of discovery to listing on the National Priorities List through completion of remedial and response actions. (U.S. EPA, 1995f)

[19] RCRIS, or the Resource Conservation and Recovery Information System, is used primarily to track entities regulated under RCRA Subtitle C (hazardous waste handlers). RCRIS includes data on general handler information, permit or closure status, compliance with federal and state regulations, and cleanup activities. (U.S. EPA, 1995f)

[20] SDWIS, or the Safe Drinking Water Information System contains information about public water systems and their violations of EPA's drinking water regulations. These statutes and accompanying regulations establish maximum contaminant levels, treatment techniques, and monitoring and reporting requirements to ensure that water provided to customers is safe for human consumption.

The Right-to-Know Computer Network (RTK NET) is an online service run by OMB Watch and the Unison Institute. RTK NET offers free access to multiple health and environmental databases, including:

ARIP	Accidental Release Information Program
BRS	Biennial Reporting System
DOCKET	Criminal and Enforcement Dockets
FINDS	Facility Indexing System
PCS	Permit Compliance System
TRI	Toxics Release Inventory
CERCLIS	CERCLA Information System
ERNS	Emergency Response Notification System
TSCATS	Toxic Substances Control Act Submissions
RCRIS	Resource Conservation and Recovery Act Information System

Data within RTK Net is only that which is publicly accessible by other means. In other words, no CBI is included. Access is free. RTK NET can be reached via dialup or Internet (www.rtk.net).

Resources on the EPA Mainframe include the following databases:

AFS	AIRS Facility Subsystem
BRS	Biennial Reporting System
CERCLIS	CERCLA Information System
DOCKET	Criminal and Enforcement Dockets
DUNS	Dun and Bradstreet Marketing Services -- Identifier File
ERNS	Emergency Response Notification System
FFIS	Federal Facilities Information System
FINDS	Facility Indexing System
PCS	Permit Compliance System
RCRIS	Resource Conservation and Recovery Information System
TRI	Toxics Release Inventory

Selected data fields from these and other databases are linked together at the facility level through IDEA (Integrated Data for Enforcement Analysis). A more detailed description of IDEA can be found in Section 5(a) of this supporting statement.

ERNS can also be reached through the Department of Transportation's (DOT) VAX minicomputer in Cambridge MA. Online access is restricted to EPA and other authorized federal governmental

personnel. EPA's Emergency Response Division in the Office of Emergency and Remedial Response provides fact sheets, hard copies, diskettes, or tapes of requested information.

Other Resources

The Freedom of Information Act (FOIA) is another mechanism that can be utilized by the public to request information from EPA. A FOIA is a written request for records held or believed to be held by EPA where a record is defined as any existing document, memorandum, report, photograph, sound or magnetic recording, computer tape, drawing, or other medium in which information has been preserved. FOIAs are usually utilized when there are not other direct methods, such as hotlines or clearinghouses, available through which the public can request the information. EPA will release the requested information unless it falls under one of the following nine exemptions:

1. Matters of national defense or foreign policy.
2. Internal Agency rules.
3. Information exempted by other statutes.
4. Trade secrets, commercial, or financial information--Confidential Business Information (CBI).
5. Privileged inter- or intra-Agency memoranda.
6. Personal privacy.
7. Records or information compiled for law enforcement purposes.
8. Records of financial institutions.
9. Geographical or geophysical information and data concerning wells.

FOIA authorizes EPA to charge requesters the direct cost for any searching, reviewing, and duplication required to respond to the request if these costs exceed $25.00.

The National Technical Information Service (NTIS), a component of the Department of Commerce, is used extensively by many EPA system managers to make information available to the public. NTIS, by law, is self-supporting and sells its products and services to users on a cost-recovery basis. NTIS reproduces and sells the material created by EPA which includes publications, diskettes, CD ROMs, magnetic tapes, and video tapes. To search online for environmental reports, NTIS's Bibliographic Database is offered through various commercial services. In addition, NTIS publishes a twice monthly subscription, the NTIS Alert on Environmental Pollution & Control. This subscription provides summaries of newly issued environmental reports and studies released by Government agencies. NTIS offers several EPA databases on computer tape and CD-ROM. Some of the databases are text only, requiring the user to provide their own search and retrieval software.

Available databases include:

CERCLIS	CERCLA Information System (text only)
ERNS	Emergency Response Notification System (text only)
FINDS	Facility Indexing System (text only)
ISI	Information Systems Inventory (an inventory of inventories)
IRIS	Integrated Risk Information System
PCS	Permit Compliance System
RCRIS Extracts	RCRA Information System
TRI	Toxics Release Inventory (CD-ROM)
TSCA Inventory	Toxic Substances Control Act Chemical Substances Inventory

ATTACHMENT C

Emergency Planning and Community Right to Know Act of 1986, Section 313
(42 U.S.C.A. Section 1023)

(Note: An electronic copy of this attachment is not available. Please contact the Environmental Protection Agency at the address noted in the Federal Register notice for a complete copy of this ICR.)

December 11, 1999

ATTACHMENT D

Pollution Prevention Act
(42 U.S.C.A. Sections 13101-13109)

(Note: An electronic copy of this attachment is not available. Please contact the Environmental Protection Agency at the address noted in the Federal Register notice for a complete copy of this ICR.)

December 11, 1999

ATTACHMENT E

40 CFR Part 372
Toxic Chemical Release Reporting: Community Right-to-Know

(Note: An electronic copy of this attachment is not available. Please contact the Environmental Protection Agency at the address noted in the Federal Register notice for a complete copy of this ICR.)

December 11, 1999

ATTACHMENT F

Toxic Chemical Release Inventory Reporting Form and Instructions
EPA Form 9350-1 (Proposed Revision)

(Note: An electronic copy of this attachment is not available. Please contact the Environmental Protection Agency at the address noted in the Federal Register notice for a complete copy of this ICR.)

December 11, 1999

ATTACHMENT G

Responses to Comments Received
[OPPTS-00275; FRL-6091-4]

ATTACHMENT G
RESPONSE TO COMMENTS RECEIVED [OPPTS-00275; FRL-6091-4]

A. COMMENTS RELATED TO EPA'S ESTIMATES OF BURDEN AND COST

The comments on the ICR that related to EPA's estimates of burden and cost can be summarized as follows:

- The ICR should take into account the additional facilities projected to report prior to the expiration of the ICR as a result of regulatory amendments;
- EPA's total burden estimate should include reporting facilities' burden for collecting data on TRI chemicals that do not meet reporting thresholds;
- EPA's Form R burden estimates should account for the burden resulting from revisions to TRI guidance; and
- EPA's burden estimates should accurately reflect subsequent year reporting burdens for newly added industry groups that reported for the first time in 1999.

The responses to these comments are provided below:

1. Include Additional Facilities Projected to Report as a Result Of Regulatory Amendments

The Chemical Manufacturers Association (CMA) commented that the ICR should take into account the additional facilities projected to report prior to the expiration of the ICR as a result of regulatory amendments. CMA believes that the number of respondents in the ICR should reflect the actual number of respondents in 1997, the estimated number of respondents in new reporting sectors that reported for the first time in 1999, the estimated number of new respondents resulting from the proposed rule to lower the reporting thresholds for a number of persistent, bioaccumulative and toxic (PBT) chemicals, and the estimated number of new respondents resulting from the proposed rule to lower reporting thresholds for lead and lead compounds. CMA states that at a minimum, the ICR should take into account the number of utilities, mining, and other new TRI-reporting industries that first reported in July 1999.

CMA appears to have misunderstood that the draft ICR did in fact take into account the number of facilities in industry groups that first reported in July 1999. The draft ICR estimated that there would be 25,159 Form R respondents, based on the actual number of Form R respondents in 1997 (18,892 respondents) and the estimated number of respondents in new industries that reported for the first time in 1999 (6,267 respondents).[21]

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21. CMA cites an incorrect value for the number of Form R respondents in 1997. CMA states there were 21,490 respondents, which is the *total* number of facilities reporting under EPCRA section 313 in 1997. This is not the number of Form R respondents; it includes a number of facilities that submit only Form As, and do not submit any Form Rs. Facilities that only submit Form As are not counted as respondents in this Form R ICR (EPA # 1363).

CMA is correct that the draft ICR did not include the estimated number of new respondents resulting from either the proposed PBT rule or the proposed lead rule. EPA prepared two separate proposed amendments to the ICR to account for the reporting that would result from the proposed PBT and lead rules. Since EPA subsequently finalized the PBT rule (64 FR 58666), the Agency has included the reporting resulting from the PBT final rule in this ICR. There are an estimated 3,114 new respondents due to the PBT rule, so this results in a total of 28,273 respondents (18,892 Form R respondents for 1997 plus an estimated 6,267 industry expansion respondents plus an estimated 3,114 new PBT respondents). However, EPA does not believe that it is appropriate to include projected reporting from the proposed lead rule in this ICR. When the lead rule is finalized, EPA will prepare a final ICR amendment to account for the burden resulting from that rule.

2. Estimates Should Include Compliance Determination Burden for Chemicals that Do Not Exceed Reporting Thresholds

CMA also commented that it suspects that EPA's estimated total annual burden hours neglect the total burden associated with determining compliance of TRI-listed substances that ultimately do not meet reporting thresholds.

CMA is mistaken, as EPA's burden hour estimate does include time for compliance determination (which is the time for facilities to determine whether they have listed chemicals and whether such chemicals exceed the reporting thresholds). While compliance determination burden varies among facilities, EPA believes that its overall burden estimates are more than enough to cover the time required for compliance, including compliance determination for both substances that exceed the reporting threshold and those that do not.

Even facilities that feel EPA has underestimated burden may actually spend less time than EPA would predict. For example, in comments submitted on the TRI chemical expansion rulemaking, Monsanto stated that much of the effort EPA attributes to Form R completion is actually performed as part of compliance determination. Monsanto estimated that its plants typically review 2 to 4 times as many TRI listed chemicals as they report, since many of the listed chemicals do not exceed reporting thresholds, and that the time required for compliance determination in subsequent years averages 2 hours per chemical. Monsanto further stated that for each chemical for which a Form R is required, it spent 20 hours to compile information, prepare the Form, and maintain records. Monsanto stated that it submitted 270 Form Rs per year, and thus estimated it performed compliance determinations on approximately 1,080 chemicals. This yields an estimated direct time investment of 7,560 hours per year. Monsanto estimated that it spent an additional 1,500 hours per year on ancillary activities such as corporate administrative support, computer database support, publicizing information among employees and the public, and responding to EPA quality assurance surveys. Thus, Monsanto estimated that it devoted a total of 9,100 hours per year to EPCRA section 313 related activities.

Instead, they are counted as respondents in the Form A ICR (EPA # 1704). CMA should have used 18,892 Form R respondents for 1997, which is what EPA used in the draft ICR, and what is used in this ICR as well.

By contrast, EPA estimates that compiling information, preparing the Form R and maintaining records requires an average of 52.1 hours per year (compared to Monsanto's estimate of 20 hours). Thus, EPA would estimate that simply filing 270 Form Rs (as Monsanto did) would require 14,100 hours per year plus the time required for compliance determination. Thus, EPA's total burden estimate for Monsanto would be over 50% higher than Monsanto's own estimate of 9,100 hours. Based on the comparison between Monsanto's statements about its actual burden and EPA's estimate of the time required without even including compliance determination or ancillary activities, EPA believes that its total burden estimates in the ICR are reasonable.

The unit time estimates used by EPA are average values. As with any average, some facilities will be above the average and others will be below it. EPA recognizes that some facilities may require more than the average time to comply. However, there are many other facilities which will have a simpler compliance determination process that requires less time than the average. EPA believes that many facilities will readily be able to determine that they do not have listed chemicals on site above thresholds. For instance, facilities that determine they do not have listed chemicals on-site do not have to determine whether they have exceeded the thresholds. EPA believes that its burden estimates are reasonable averages, and that they overestimate the total time many facilities need to comply with EPCRA section 313.

3. Burden Estimates Should Reflect Time Spent as a Result of Changes in TRI Guidance

CMA and the American Petroleum Institute (API) commented that the Paperwork Reduction Act (PRA) defines "burden" to include the time to "adjust the existing ways to comply with any previously applicable instructions and requirements", and state that the ICR does not appear to include the burden imposed on facilities due to changes in guidance such as EPA's Q&A document.

CMA is mistaken, as EPA's estimates do include the cost of adjusting the existing ways to comply with any previously applicable instructions and requirements. Under the PRA, "burden" means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. For this collection, EPA's time estimates include the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. Again, real world experience indicates that EPA's burden estimates exceed what facilities actually expend for compliance, including the time spent adjusting to new guidance.

For example, the Synthetic Organic Chemical Manufacturers Association, Inc. (SOCMA) commissioned a study entitled "Project Real Cost" to determine whether EPA's estimates of regulatory costs exceeded or fell short of actual expenditures. This was determined by performing an in-depth study of actual reporting costs at several SOCMA member facilities (i.e., specialty chemical manufacturers), and comparing the result to the cost that would be estimated for these facilities using EPA's cost estimation methodology. Using EPA's methodology resulted in an estimated average cost of $30,300 per facility. However, based on an extensive review of the

reporting process at these facilities, the SOCMA report concluded that the actual cost of reporting averaged $23,430 per facility. Thus, the SOCMA report found that the actual cost of TRI reporting at these facilities (which includes the cost of complying with changes in guidance) was only three-quarters of EPA's estimated cost. EPA believes that SOCMA's estimates may overstate the actual costs of reporting for many facilities subject to EPCRA section 313 reporting. Nonetheless, SOCMA's study lends further support to the evidence that EPA's estimates are conservative, and that there are numerous facilities that spend less time than EPA predicts.

4. Subsequent Year Burden for Newly Added Industries

API commented that EPA recently added seven industry sectors (including petroleum wholesalers represented by API), which reported for the first time in 1999. The ICR claims that second year burdens for these facilities will be substantially less than first year burdens. API encouraged EPA to do a more extensive analysis of the actual burden experienced by newly covered industries, and revise its estimates to reflect that information. API urged EPA to delay submitting the ICR renewal to OMB until it performs such a study.

API has submitted no evidence that costs (for new industries in general or petroleum wholesalers in particular) are higher than EPA predicted, or that they will not decline as much in subsequent years as EPA predicted. Aside from not preventing any evidence, API has not even indicated whether it feels that EPA's estimates should be higher or lower than they currently are. Based on API's comments, the costs for such newly added industries could be lower than EPA's average cost estimates and could fall even further in subsequent years. (EPA believes this is the case for petroleum wholesalers due to the relative simplicity of many of the operations, and the fact that there are economies of scale for facilities filing multiple reports, particularly for the petroleum wholesale industry where there are multiple chemicals in a single product or related products.)

There are a number of reasons why the burden of reporting decreases over time. Firms reporting for the first time must become familiar with how the reporting requirements apply to their operations. After the first year, when they are familiar with the requirements, their reporting burden is lower. In addition to the learning curve effect, there are other reasons why the regulatory burden decreases over time. These include changes in standard business practices such that the collection of necessary data becomes part of standard operating procedures; improvements in EPA's electronic reporting package; and the development of EPA guidance documents that simplify reporting (such as the "look-up" tables that were developed for chemical wholesalers).

EPA stated in the ICR that reporting burden for new industries would decrease after the first year, as it did for the manufacturing sector. EPA has not seen any evidence to the contrary. However, there is evidence that facilities in newly added industries will require less time for compliance in subsequent years than in the first year. For example, prior to the submission of this ICR, EPA received a letter from Palmark Inc., which operates an electric generating facility reporting for the first time in 1999. Palmark sent this letter because, based on their experience, they felt that EPA had underestimated the burden for compliance. However, information provided in a conversation with Palmark indicated that it had misunderstood EPA's burden estimate. (Palmark mistakenly compared the time required for all of its compliance requirements at the facility in the first year to EPA's estimate of the subsequent-year burden for a single Form R.) In

fact, EPA's estimates were significantly higher than Palmark's experience. Palmark also estimated that its burden in subsequent years would be an order of magnitude lower than its first year burden.

Specifically, Palmark's letter indicated that it required a total of 80 hours for compliance determination, rule familiarization, and reporting for two chemicals. However, EPA's average costs estimates would predict that a first-year facility submitting two Form R's would expend a total of 198.5 hours for these tasks, which is 150% higher than the time that Palmark indicated it actually required.

And in the conversation with EPA, Palmark indicated that the time for compliance in subsequent years would be significantly less than the first year, probably around 8 hours. By comparison, EPA's estimate of subsequent year compliance burden for a facility submitting two Form R's would be 108.2 hours, which is 1,250% higher than Palmark's estimate of the time it will require.

Palmark's experience indicates both that there are facilities in the new reporting industries which will require less time than EPA's average estimates, and that it is reasonable to assume that these facilities will require much less time to report in subsequent years than in the first year. Finally, Palmark's experience demonstrates the sample selection bias in comments about EPA's burden estimates. Companies that have higher costs than EPA's average cost estimates (or which believe they have higher costs) will write in to complain, but companies that have costs lower than average will not have any incentive to comment on EPA's estimates. While there may be some vocal facilities that have higher costs than EPA's average estimates, EPA believes that there are many facilities such as Palmark that are below average.

In light of the evidence, EPA feels that its burden estimates for the new industries are reasonable, and certainly do not understate the burden of reporting. EPA sees no need to delay submitting the ICR to OMB.

B. COMMENTS RELATED TO PROPOSED FORM R CHANGES

For the Toxic Release Inventory Form R Renewal, the Agency proposed that the form remain essentially the same except for two items:

A. Under Section 4. Facility Identification, the term "primary" would be added to the first SIC Code box indicating that a facility's primary SIC code be entered, and

B. The Agency proposed to add a column to Section 7A, asking respondents how many individual waste streams the data apply to.

The Agency received comments both in support of and rejecting the proposed changes. Upon review of all comments, the Agency intends to make the proposed change to Section 4 of Form R as this simple change would clarify the data required in this information field. After review of comments and further review of the Form R reporting package, EPA determined that the proposed change to Section 7 was unnecessary. The Agency has decided not to make the proposed change to Section 7A (onsite treatment methods and efficiency) at this time.

C. COMMENTS RELATED TO ADDITIONAL FORM R CHANGES

Several comments were received with recommendations for changing the format of specific information fields on Form R, adding new fields or deleting entire data elements altogether. Implementation of any of these changes may require rulemaking. EPA will review the recommended changes and propose any revisions in the future if those revisions will either simplify or clarify the TRI reporting process.

D. COMMENTS RELATED TO TRI GUIDANCE

The Agency received a comment/recommendation from CMA that EPA implement a formal review process for changes in Agency guidance related to TRI reporting. TRI guidance documents (e.g. 1997 TRI Q&A) are intended as guidance and are not final Agency actions. Guidance for TRI reporting is not intended to reflect binding norms and is subject to change. As such, it is not subject to notice and comment requirements.

ATTACHMENT H

EPA ICR 1363.10 - ICR Amendment for Final Rule
Reporting Threshold for PBT Chemicals

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